

PMOC MONTHLY REPORT

Second Avenue Subway Phase 1(MTACC-SAS) Project
Metropolitan Transportation Authority
New York, New York

June 1 to June 30, 2011



PMOC Contract No. DTFT60-09-D-00007

Task Order No. 2, Project No. DC-27-5115, Work Order No. 02

OPs Referenced: OP20-OP26, OP33, OP34, OP37, OP40, OP41, OP53, OP54

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Length of time on project: 1 year

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EXECUTIVE SUMMARY

PROJECT DESCRIPTION

The Second Avenue Subway project will include a two-track line along Second Avenue from 125th Street to the Financial District in lower Manhattan. It will also include a connection from Second Avenue through the 63rd Street tunnel to existing tracks for service to West Midtown and Brooklyn. Sixteen new ADA accessible stations will be constructed. The Second Avenue Subway will reduce overcrowding and delays on the Lexington Avenue line, improving travel for both city and suburban commuters, and provide better access to mass transit for residents of the far East Side of Manhattan. Stations will have a combination of escalators, stairs, and, in compliance with the Americans with Disabilities Act, elevator connections from street-level to station mezzanine and from mezzanine to platforms.

Phase One of the project will include tunnels from 105th Street and Second Avenue to 63rd Street and Third Avenue, with new stations along Second Avenue at 96th, 86th and 72nd Streets and new entrances to the existing Lexington Ave./63rd Street Station at 63rd Street and Third Avenue.

COST BASELINE

FFGA \$4.87 billion (Federal = \$1.35; Local = \$3.52 billion including financing cost of \$817 million).

SCHEDULE BASELINE

Key Milestones:

- | | |
|---|-------------------|
| ▪ Preliminary Engineering (PE): | December 2001 |
| ▪ Final EIS Record Of Decision (ROD): | July 8, 2004 |
| ▪ FFGA: | November 19, 2007 |
| ▪ Final Design: | April 2006 |
| ▪ Original FFGA Revenue Service Date (RSD): | June 30, 2014 |
| ▪ Current MTA RSD: | December 30, 2016 |
| ▪ Current FTA/PMOC RSD: | February 2018 |

COMPLETION STATUS

A summary of the completion status of the five (5) active construction contracts as of June 30, 2011 is as follows:

- C26002 (Tunnel Boring) – 85.40%
- C26005 (96th Street Station) – 35.80%
- C26013 (86th Street Station) – 71.7%
- C26006 (63rd Street Station) – 1.8%
- C26007 (72nd Street Station) – 12.60%

Aggregate Construction % Completion:

- *47.6% of all construction work is under contract*
- *39.0% of active construction contracts are complete*
- *18.90% of all construction is complete*

PROGRESS AND ISSUES

Through June 30, 2011, Contract C-26002 has mined approximately 4,206 LF (54.4%) of the 7,827 LF East Bore. Progress during June was generally better than predicted. Completion of TBM mining is currently forecast for October of 2011.

Delays to the C5B Procurement were not resolved during June 2011. MTACC is currently forecasting an August 1, 2011 award of this package. For further discussion of this topic, refer to Section 4 of this report.

An additional delay has been reported to the procurement of construction package C-26009 Systems (C6). Proposals will now be received on July 29, 2011. The forecast contract award date of October 27, 2011 is unchanged.

With the completion of the structural steel framing and the gantry crane system the muck house at the 72nd Street shaft became operational. Major steel framing for the 69th Street muck house has been completed; this system should be operational in late July 2011. Both muck houses are required for the excavation of the 72nd Street Station cavern.

MONTHLY UPDATE

The information contained in the body of this report is limited, in accordance with Oversight Procedure 25, to “inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations.” Where a section is included with no text, there are no new “critical project occurrences [or] issues” to report this month.

ELPEP SUMMARY

Status:

Throughout June 2011, MTACC continued to work with the FTA to produce Management Plans and to demonstrate compliance with the Enterprise Level Project Execution Plan (ELPEP). As reported previously, the original schedule for accomplishment of portions of the ELPEP implementation has been delayed. However the many meetings and discussions that have been held have served as a catalyst for the incremental incorporation of many ELPEP concepts and processes by the respective ESA and SAS project teams. As the remaining elements of the ELPEP are finalized, this process is expected to continue.

The current status of each of the five (5) main ELPEP components is summarized as follows:

- ***Technical Capacity and Capability (TCC)** – Complete ESA PMP was recently submitted. The SAS PMP has been reviewed by the PMOC. The PMOC will coordinate the presentation of its findings for each of the projects to the FTA and subsequently to the MTACC.*
- ***Schedule & Schedule Contingency Management Plan** –The PMOC has verified SAS substantial compliance with the SMP since August 2010. The process of transferring the verification process to the respective project teams has been generally discussed in ELPEP meetings held on May 19, 2011 and June 16, 2011.*
- ***Cost & Cost Contingency Management Plan (CMP)** –Final PMOC comments on the CMP were transmitted to MTACC on July 1, 2011. Upon resolution of minor items and concurrence on resulting “Candidate Revisions”, the PMOC will recommend formal conditional acceptance to the FTA.*
- ***Risk Mitigation Capacity Plan (RMCP)** – Outstanding comments to this plan were briefly reviewed at the June 16, 2011 ELPEP meeting. Most issues on the tracking log have been reconciled. Development of a conditional approval, similar to the CMP approach described above, will be developed by the PMOC*
- ***Conformance Demonstration**- MTACC is responsible for demonstrating full compliance to ELPEP requirements. Preliminary discussions regarding the manner by which conformance will be documented were held. MTACC has proposed developing a “white paper” that will explain its proposed means of conformance demonstration.*

Observation:

Although overall implementation of the ELPEP is somewhat behind schedule, the MTACC has begun implementation of schedule, cost and risk management plans. Both projects have updated their PMPs to support these management documents and processes. The PMOC has noted numerous instances where benefits conferred by these enhanced management tools have been realized.

Concerns and Recommendations:

Development of formal implementation verification and reporting process for each of these ELPEP elements should be given priority. The verification process will ensure that all benefits associated with the ELPEP are realized to the greatest extent possible.

Table 1: Project Budget/Cost Table

	FFGA			FFGA Amend	MTA's Current Working Budget (CWB)		Expenditures as of June 30, 2011	
	(\$ Millions)	(%) Grand Total Cost	Obligated (\$ Million)	TBD	(\$ Millions)	(%) Grand Total Cost	(\$ Millions)	% of Grand Total Cost
Grand Total Cost:	4,866.614	100	4,137.911		5,489.614	100	1,281.032	23.34
Financing Cost	816.614	16.78			816.614	14.88		
Total Project Cost:	4,050.000	83.22	4,137.911		4,673.000	85.12	1,281.032	23.34
Total Federal share:	1,350.693	27.75	*628.911		1,350.693	24.60	366.805	6.68
Total FTA share:	1,300.000	96.25	600.818		1,300.000	23.68	355.695	6.48
5309 New Starts share	1,300.000	100	600.818		1,300.000	23.68	355.695	6.48
Total FHWA share:	50.693	3.75	28.093		50.693	0.92	11.112	.20
CMAQ	48.233	95.15	25.633		48.233	0.88	8.652	.16
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	.04
Total Local share:	2,699.307	55.47	**3,509.000		**3,509.000	63.92	914.227	16.65
State share	450.000	16.67	100.000		450.000	8.20		
Agency share	2,249.307	83.33	1,145.782		3,059.000	55.72		
City share	0	0			0	0		

*Obligated amounts obtained from the Transportation Electronic Award Management (TEAM) system and MTACC's Grant Management Department. **Current MTA Board approved budget see Section 1.1.3 b for details.

Table 2: Summary of Critical Dates

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	03/20/2007A	03/20/2007A
Construction Complete	December 31, 2013	May 23, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016(1)	February 2018

(1) SAS Phase 1 Integrated Project Schedule, Revision 3; Update #59, and data date of June 1, 2011.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

Status:

During June, 2011, the SAS Quality Manager resigned for personal reasons and will be replaced by the lead Quality Manager for the CCM. This will create an additional job opening for the CCM.

Observation:

The PMOC has observed that within the past year there has been a substantial turnover of the CCM Quality staff. In addition to the lead Quality Manager becoming the SAS Quality Manager, the former lead Quality Manager is now the Resident Engineer on the C4B contract and another Quality Manager has resigned.

Concerns and Recommendations:

The CCM now has three Quality Managers, two of whom are new. The PMOC is concerned that there is only one veteran Quality Manager and recommends that the new replacement be an experienced individual. As the SAS Project construction activities increase, it is suggested that individuals with extensive construction experience be considered in filling the present job opening plus any future ones.

1.1.2 Grantee's Work Approach, Understanding, and Performance Ability

a) Adequacy of Project Management Plan and Project Controls

Status:

PMOC review of the updated SAS Project Management Plan (Revision 8) has been completed. The PMOC has continued to evaluate the specific issue that resulted in a Candidate Revision, whether the proposed PMP revision has been implemented and whether the original issue was ultimately satisfied.

Observation:

The PMOC will review its findings with the FTA and subsequently present findings and recommendations to the MTA.

Concerns and Recommendations:

Any concerns will be documented as comments and tracked for resolution prior to PMOC's recommendation for FTA's approval of the revised PMP.

b) Grantee's Approach to FFGA and other FTA/Federal Requirements

Status:

MTACC continues to utilize the ELPEP and its various sub-plans in management of the FFGA.

Observation:

Efforts are underway to amend the FFGA because the baseline cost and schedule have been exceeded. *No update this period.*

Concerns and Recommendations:

See section 1.1.2 a

c) Grantee's Approach to Community Relations, Asset Management, and Force Account Plan

Status:

Community Relations—During June 2011, the MTACC community relations representative continued to support the bi-weekly job progress meetings and made known any concerns of the community that needed to be addressed. The Good Neighbor Initiative is ongoing to standardize the look of construction barriers, paint barriers, increase the use of signage and improve overall cleanness of work zone areas.

Asset Management—Identification and control of project assets will be coordinated between the System Contractor (Contract 6) and NYCT's Department of Subways. Development of the plan is on-going.

Force Account—The Force Account requirements are documented in the SAS Force Account Plan. The plan gives a description and a cost estimate of the NYCT services required for the design of the track and signal elements of the system and to support construction activities for each individual contract.

Observation:

Responses to community and business concerns are timely. The project recognizes that more community buy-in is needed to minimize the probability of community distress. SAS Asset Management Plan must be integrated with NYCT's Property Management System. The Force Account budget is being validated as part of the review of Revision 8 of the SAS Cost Estimate.

Concerns and Recommendations:

None

d) Grantee's Approach to Safety and Security

Status:

No change in status this period.

Observation:

During June 2011, each construction contractor continued being proactive in implementing its safety program. Weekly tool box meetings were conducted to keep the workforce informed on various safety topics. Root cause analysis is being performed to assure that the actual cause of an incident has been identified and positive corrective actions implemented to prevent recurrence. *The Lost Time Accident Rate and OSHA Recordable Accident Rate from the start of construction until May 31, 2011 are 1.82 and 4.89, respectively. Both rates are above the national average of 2.2 and 4.2. The cumulative construction time worked since the project inception is 2,087,620 hours. Cumulative lost time injuries since project inception is 19 and the cumulative recordable injuries are 32.*

Due to the sensitive nature of the security effort, the proposed 2010-2014 Capital Program identifies a single budgetary reserve of \$250M, which will be used to progress the next group of projects. (Reference: Proposed MTA Capital Program 2010-2014, dated September 23, 2009).

Concerns and Recommendations:

None

**1.1.3 Grantee's Understanding of Federal Requirements and Local Funding Process
Federal Requirements**

a) Uniform Property Acquisition and Relocation Act of 1970

Real estate acquisition and tenant relocation is being performed in accordance with the approved SAS Real Estate Acquisition Management Plan and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and FTA real estate requirements 5010.1C.

b) Local Funding Agreements

MTA's approved 2000-2004 and 2005-2009 Capital Programs provided \$2,964 million for SAS Phase 1 (\$1,050 million and \$1,914 million respectively). The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase 1 project. Of the \$1,487 million, \$545 million was approved for the 2010-2011 timeframe. MTA needs to approve \$942 million for the 2012-2014 timeframe.

1.1.4 Scope Definition and Control

Status:

The scope of the SAS Project is defined by the FEIS, ROD and the FFGA. The project scope will be delivered via ten (10) construction packages, with support from NYCT for rail systems installation and overall operating systems inspection and testing.

Observation:

The process of utilizing the Configuration Control Board (CCB), the change control process, the Technical Advisory Committee (TAC) and issuing Technical Memorandums has proven to be an effective means of controlling scope and managing the transfer of scope between construction packages. *This process continues to be used to manage scope refinements and to adjust package scope to react to unanticipated field conditions.*

Concerns and Recommendations:

Technical processes involving the modification or transfer of scope between construction packages are well-established and have been proven effective. Management processes involving the cost and schedule impacts of scope changes and transfers are less developed. The above referenced processes should be supplemented to better support cost and schedule changes and transfers between packages.

1.1.5 Quality

Status:

The need for a Quality Work Plan (QWP) for Rock Drilling and Blasting was listed as an issue at the C5A QA/QC Monthly Project Progress Meeting held on April 26, 2011. JDSI completed and submitted the QWP for review on May, 6, 2011. The CCM responded with comments and JDSI revised and resubmitted the plan. As of the June 21, 2011 QA/QC Monthly Progress Meeting, the QWP still had not been approved by the CCM. Concern was expressed that the lack of an approved plan could impact the progress of the work within two weeks.

Observations:

The QWP for Rock Drilling and Blasting was approved on June 23, 2011. The PMOC understands this plan was prepared prior to a final determination on the necessity of blasting, however the overall duration required to review and improve a significant submittal which has the foreseeable ability impact the progress of the work is a matter for some concern.

Concerns and Recommendations:

The PMOC is concerned that instability in the CCM Quality Staff, previously discussed in Section 1.1.1 of this report, may have been a factor in this matter. The PMOC repeat its previous recommendation that the CCM Quality Staff be reinforced with qualified individuals in the immediate future.

1.1.6 Project Schedule

Status:

A summary of project schedule information is as follows:

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	03/20/2007A	03/20/2007A
Construction Complete	December 31, 2013	May 23, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

Observations:

While the Revenue Service Date (RSD), as forecast by Update #59 of the Integrated Project Schedule (IPS), has remained December 30, 2016, the calculated completion of Phase 1 construction has been delayed to October 25, 2016. As a consequence of the delays to construction, schedule contingency has been reduced from 97 CD to 67 CD.

The PMOC has identified specific instances where it takes exception to the specific technique or manner in which the IPS models an event or situation. These differences of opinion are all within a reasonable range of acceptable methodology and professional judgment. Of greater significance is the fact that the SAS project team utilizes the IPS as an integral part of its decision making process and actively manages events with due consideration of their impact on the schedule.

Concerns and Recommendations:

The SAS Project Team continues to demonstrate its capability and intent actively manage the project schedule and achieve the established schedule goals. No concerns this period.

1.1.7 Project Budget and Cost

Status:

Total project cost in the approved FFGA is \$4,866,614 million and is allocated into the Standard Cost Categories (SCC) as shown below in Table 1-1.


Table 1-1: Standard Cost Categories

Standard Cost Category (SCC) #	Description	Year of Expenditure \$000
10	Guideway& Track Elements	612,404
20	Stations, Stops, Terminals, Intermodal	1,092,836
30	Support Facilities: Yards, Shops, Admin Bldgs.	0
40	Site Work & Special Conditions	276,229
50	Systems	322,707
60	ROW, Land, Existing Improvements	240,960
70	Vehicles	152,999
80	Professional Services	796,311
90	Unallocated Contingency	555,554
Subtotal		4,050,000
Financing Cost		816,614
Total Project		4,866,614

Table 1-2 lists the associated grants in the Transportation Electronic Award Management (TEAM) System with respective appropriated and obligated amounts as of June 30, 2011.

Table 1-2: Appropriated and Obligated Funds

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru June 30, 2011
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$167,810,300
NY-03-0408-06	\$274,920,030	\$274,920,030	\$75,594,548
NY-03-0408-07	Pending	Pending	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$78,870,000
NY-95-X009-00	\$25,633,000	\$25,633,000	\$8,652,432
NY-95-X015-00	\$45,800,000	\$45,800,000	0
Total	\$628,911,200.00	\$628,911,200.00	\$366,805,150.00

 * Denotes American Recovery and Reinvestment Act (ARRA) funds

A total of \$1,281,032,328 has been expended on the project through June 30, 2011, of which \$412,087,563 has been spent on design and \$481,166,606 on construction (MTACC's June 2011 Cost and Schedule Summary Input).

Observation:

Local funds totaling \$914,227,178 (\$1,281,032,328 – \$366,805,150) have been spent as of June 30, 2011. 2011. MTA's approved 2000-2004 and 2005-2009 Capital Programs provided \$2,964 million for SAS Phase 1 (\$1,050 million and \$1,914 million respectively). The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase 1 project. Of the \$1,487 million, \$545 million was approved for the 2010-2011 timeframe. MTA needs to approve \$942 million for the 2012-2014 timeframe.

Concerns and Recommendations:

Availability of local funding has been identified as a major concern. Current funding appears to support SAS contract awards through mid-2012. Beyond that time, a detailed analysis of funding, obligations and expenditures is required to verify that the current construction schedule can be supported.

1.1.8 Project Risk Monitoring and Mitigation

Status:

Risk monitoring and mitigation is ongoing and being performed per the SAS Risk Management Program, which is documented in Section 6.0 of the PMP. Through June 2011, the project has held numerous Risk Mitigation Meetings. A Risk Register has been developed and maintained on the Project. *Throughout this period, retained risks have been reviewed and refined as part of the SAS Team's initiative to develop a risk-based cost management system.*

Observation:

SAS Project Management is being proactive in its efforts to monitor and mitigate risk. From the initial Risk Mitigation and through all subsequent meetings held to date, the Project has been focusing on those risks that DHA indicated in its December 2009 Risk Analysis Report as the risks that contribute the most to the contingency requirements.

Concerns and Recommendations:

None

1.1.9 Project Safety

Status:

The Lost Time Accident Rate and OSHA Recordable Accident Rate from the start of construction until May 31, 2011 are 1.82 and 4.89, respectively.

The cumulative construction time worked since the project inception is 2,087,620 hours. Cumulative lost time injuries since project inception is 19 and the cumulative recordable injuries are 32.

Observation:

Each construction contractor conducts weekly tool box meetings to keep the workforce informed on various safety topics. *Safety status is reported on at each contract Job Progress Meeting. MTACC has expanded its safety program to include a monthly walk-thru of the various work*

zones by SAS Project Management team. Safety concerns identified by CCM safety personnel and the OCIP representative are quickly addressed by the contractors. When an incident occurs, root cause analysis is performed to assure that the actual cause has been identified and positive corrective actions implemented to prevent recurrence.

Concerns and Recommendations:

None

1.2 FTA Compliance Documents

Status:

No change this period.

1.2.1 Readiness to Enter PE

Status:

Preliminary Engineering (PE) began in December 2001.

1.2.2 Readiness to Enter Final Design

Status:

Final Design began in April 2006.

1.2.3 Record of Decision

Status:

The Record of Decision (ROD) was dated July 8, 2004.

1.2.4 Readiness to Execute FFGA

Status:

The Full Funding Grant Agreement (FFGA) was dated November 19, 2007.

1.2.5 Readiness to Bid Construction Work

Status:

The PMOC's implementation of the OP53 reviews during June 2011 included the following actions:

- 1. Scheduled and conducted two internal progress meetings per week and prepared and issued meeting minutes for SAS 2B, 6 and 5C Contract reviews and 4B updates;*
- 2. Distributed additional package-level design documents directly, through internal server access, and through an FTP server to OP53 Review Team;*
- 3. The OP53 review of the 2B and 5C package design documentation continued as did review of procurement documents for the 6 packages;*
- 4. Updating and finalizing Contract 4B Executive Summary, Chronology and Procedures and Personnel report section format;*
- 5. Prepared additional updating, analyses and development of Contract 2B report sections pertaining to Demonstrated Management Capacity and Control in Procurement and Package Level Verification. Extended review of real estate and safety/ security activities.*

6. Followed up on requests to MTACC for 2B 100% Design Cost Estimate backup pricing, etc. in order to evaluate the process of estimate development and assumptions made. Proceeded further with evaluation of selected unit prices, together with potential schedule impacts from labor intensive finish installations.
7. Prepared and issued an initial response plan for detailing OP53 activities, progress backup and interim work products for recent periods in response to FTA request for backup.
8. Developed and issued a draft Execution Plan for OP53 package reviews for FTA review and comment :
9. Prepared and issued an updated schedule, Work Plan, labor hour breakdowns and initial In-Progress review documents for various OP53 Team activities in response to FTA request on June 9, 2011 Check in Items.
10. Prepared and issued weekly In-Progress review documents for various OP53 Team activities to report progress per FTA request.

Observations:

Contract C-26009 (C6) Procurement-The PMOC's review of the procurement documentation for C6 compared the documentation to the New York City Transit Procurement Policy and Instruction Manual. The C6 documents included the Volume 1 of 5 of the Second Avenue Subway, undated table of Contents page dating indicates February 2011, bid documents termed " Request for Proposal Construction of Part of Second Avenue Subway Route 132A TRACK, SIGNAL, TRACTION POWER and COMMUNICATION SYSTEMS" , resulted in the following observations:

- o As regards the Federal Transit Administration Grantee Management Seminar FY 2011 booklet included a section (Exhibit 6.1 & 6.2) on required Third Party Contract Clauses the PMOC can state that these clauses have been included in the Contract C-26009 Volume 1 of 5 Source Selection Plan (SSP) - In section 6.7.2 Receipt of Proposal and Distribution of the Source Selection Plan, it states that "The Procurement Representative delivers the sealed Price Proposal to the Cost/Price Analysis unit and will forward copies of the narrative sections of any Alternative response to the attention of Estimating". There is no identification beyond this reference, of how a cost estimate is prepared, and who is responsible for doing so. PCA, Procurement Policy Section 2.14, requires that an estimate and budget be included in the procurement request per MTACC Procurement Procedures PCA-001 and 002. An internal cost estimate is needed for negotiation, as mentioned in Section 6.9 of the SSP. Request for Proposal - The Procurement Documents make no provisions for dealing with mistakes that may occur in the submittal of a Proposal. While it is fully understood that this package is a Request for Proposal, the spirit of dealing with mistakes is very well captured in the MTA NYCT Materiel Department Procedure IV-B.4 Bid Mistake and Withdrawal, IV-B.5 Minor Informalities or Irregularities in Bids and IV-B.6 Modification of Bids before Opening. Recommendation: The PMOC is recommending that a paragraph be added to the Overview and Proposal Procedure that deals with mistakes that occur in the Request for Proposal, Article 4.05 Extra Work Directive, Paragraph B – 4th sentence states "During the

pendency of any dispute hereunder, the Contractor must proceed with work as set forth in the Extra Work Directive unless otherwise advised by the Engineer's written instructions."

Contract C-26010 (2B) Package Level Verification: Cost Estimate-The PMOC performed Package Level Verification for Cost Estimate associated with 100% Contract Plans, and Specifications (Design consultant, DMJM + Harris/Arup (DHA). The PMOC used the most current estimate, Revision 8 dated October, 2010, in this review and analysis.) The following was noted:

- *Section 4.9.2 of MTACC Procedure CO.20, Construction Cost Estimating, indicates that the Program Management Team (PMT) is required to produce an independent take-off and cost estimate which was to be reconciled with the designer's estimate. The PMOC was unable to obtain or confirm that independent estimate documentation was prepared by the PMT.*
- *The following approach was used to select bid items for review from the 2B 100% Cost Estimate. First, architectural finishes were noted to be elaborate, and confirmation was sought that their costs were addressed in the estimate, e.g. use of curved granite walls and base, granite trench covers, granite walls on station platforms, stair treads/riser consisting of one solid granite slab porcelain ceramic tiles on a metal wall cladding system, porcelain enamel on steel ceiling panels, aluminum composite ceiling panels, stainless steel screen ceiling system, stainless steel panel ceiling system, stainless steel fabric infill below railing. Next, since labor represents the largest component of risk to the job, it was determined to review bid items adding up to 10% of the total project labor and about \$0.5M or greater. For most of the heavy construction items the designer used the HCSS cost estimating program and therefore the estimates were appropriately detailed at the lowest tasks levels and properly accumulated into higher levels up to the actual bid price. The PMOC confirmed that this procedure was properly utilized. However, there were a few instances in which the PMOC recommends that the basic, low level cost assumptions be reviewed by MTACC. Observations included;*

- *Oversized Porcelain Ceramic Tile - The line item cost estimate for this item indicates \$48.39/sf material cost, and 0.3 mh/sf labor production. The materials cost was based on vendor quotes so it is acceptable. However, the labor productivity seems very low. In comparison, RS Means indicates 0.032 mh/sf for 16"x16" ceramic tiles which is approximately 10 times faster. Allowing for a slightly more difficult installation with tiles 24"x12", one would expect productivity in the area of 0.06 mh/sf.*
- *Perforated Porcelain Steel Panel, C-2A Ceiling Tile - The line item cost estimate for this item indicates \$34.75/sf material cost, \$1.17/sf equipment cost and 0.12 mh/sf labor production. The materials cost was based on vendor quotes so it is acceptable. Since the panels are somewhat different than those usually found on this type construction, the analysis is made by comparison with similar types of construction. The proposed panels vary but are on order of 5'x5'x2". Means show 0.125 mh/sf for precast concrete wall panels-8'x8'x4", 0.25mh/sf-4'x8'x4" panels, 0.07mh/sf for 8'x16'x4" panels and 0.246 mh/sf for granite veneer panel 2.5" thick. The estimate detail crew information was not provided for this item. However, Means shows \$3.31 equipment cost. Considering that ceiling installation would be much more difficult it would be expected that a productivity rate of 0.40mh/sf would be appropriate.*

Consequently, the labor portion of estimate appears to be low by a factor of 3. The equipment cost also seems to be low.

- *4" Thick High Honed Black Granite Fascia - The line item cost estimate for this item indicates \$53.17/sf material cost, \$11.16/sf equipment cost and 0.63 mh/sf labor production. The materials cost was based on vendor quotes so it is acceptable. Since the panels are somewhat different than those usually found on this type construction, there is not a lot of cost experience. Consequently, the analysis is made by comparison with similar types of construction. Means shows 0.125 mh/sf for precast concrete wall panels-8'x8'x4", 0.25mh/sf-4'x8'x4" panels, 0.07mh/sf for 8'x16'x4" panels and 0.246 mh/sf for granite veneer panel 2.5" thick. The estimate detail crew information was not provided for this item. However, Means shows \$3.31 equipment cost. Allowing that the material is somewhat different, the installation would be more difficult. A productivity rate of 0.40mh/sf would be anticipated. The rate of 0.63mh/sf used in the estimate appears to be too high. Likewise, the amount of \$11.16 for equipment costs would be out of line. However, a moderate amount of the installed panels are on curved walls and utilizes curved panels. The installation effort for these special panels is substantially more difficult than on straight walls. Consequently, it is suggested that the pricing used for the item is appropriate.*
- *Granite Pavers Type I - The line item cost estimate for this item indicates \$30.00/sf material cost, \$6.70/sf equipment cost and 0.35 mh/sf labor production. The costs seem reasonable and are in close agreement with rates found in Means (0.3mh/sf).*
- *Stainless Steel Grill Ceiling, C-1A - The line item cost estimate for this item indicates \$75.00/sf material cost, \$10.00/sf equipment cost and 0.15 mh/sf labor production. The materials cost was based on vendor quotes so it is acceptable. Since the panels are somewhat different than those usually found on this type construction, the analysis is made by comparison with similar types of construction. The proposed panels vary but are on the order of 4'x8'. Means shows 0.053mh/sf to 0.08mh/sf. The estimate detail crew information was not provided for this item. However, the item compares reasonably to Means.*
- *Nineteen bid items, chosen due to the labor sampling criteria were briefly analyzed. It was determined that they compare favorably to the Means Estimating Guide.*
- *Duct Bench Concrete - The line item cost estimate for this item indicates \$0.0 material cost, \$136.17 equipment cost and 7.14 mh/cy labor production. The crew set-up, tasks and productivity seems reasonable. Direct costs appear to be properly carried forward and amalgamated within the estimate to the bid price. Means does not have cost for similar activities. However, there appears to be a discrepancy in the task logic for this item. There is \$0.0 dollars shown for materials but the operation is obviously for supplying and placing concrete.*

Concerns and Recommendations

The PMOC's OP53 reviews resulted in the following conclusions and recommendations:

Procurement-

- *Terms and Conditions – As regards Contract Terms and Conditions failure to mention that all contract changes must be executed in writing before the work is performed; the PMOC suggests that the required “before work is performed” be added to article 4.01 of the contract.*
- *Article 4.05 Extra Work Directive, Paragraph B –, The PMOC is concerned that in the event of a dispute relating to extra work, change orders, schedule issue or any other issue that the contractor could close down activities and leave the site. Thus, the PMOC is suggesting that MTA add a specific article that requires the contractor to continue work through any and all disputes.*

Contract C-260010(2B) Package Level Verification: Cost Estimate

- *MTACC’s Program Management Team (PMT) is required to produce an independent take-off and cost estimate which was to be reconciled with the designer’s estimate. The PMOC was unable to obtain or confirm that independent estimate documentation was prepared by the PMT, and recommends that an independent estimate be prepared.*
- *For most of the heavy construction items the GEC used the HCSS cost estimating program therefore the estimates were appropriately detailed at the lowest tasks levels and properly accumulated into higher levels up to the actual bid price. The PMOC confirmed that this procedure was properly utilized. The PMOC confirmed that materials prices were obtained from current information provided by vendors, and generally that labor rates were calculated as required and equipment cost rates were appropriate.*

1.2.6 Readiness for Revenue Operations

Status:

No change this period.

Observation:

None

Concerns:

None

2.0 PROJECT SCOPE

2.1 Status &Quality: Design/Procurement/Construction

2.1.1 Engineering and Design

Status:

MTACC reported the design phase of the SAS Project is to be 100% complete in late November 2010. The PMOC has reviewed the 100% Design Memorandums, which document outstanding issues and remaining work, and generally concur.

Observation:

The primary role of the design team is now considered “Construction Administration”, which involves shop drawing review, responding to RFIs, providing design clarifications where needed and technical support during construction package bidding. Due to the nature of the work,

geotechnical engineers from the design team are on site to provide an evaluation of actual subsurface conditions encountered and any consequential design modifications.

In some cases, the incorporation of minor open issues documented in the Design Memorandums are incorporated in the construction packages via addendum during the bid phase.

Revision 8 of the Phase 1 Project Cost Estimate included a revised estimate of the Construction Administration cost-to-complete, based upon a forecast of actual positions required over the remaining duration of the construction phase. This estimate appears adequate to support the requirements of the project.

Concerns and Recommendations:

Engineering support of the project has remained adequate to support the ongoing construction effort and execute isolated design enhancements or modifications.

The EAC for construction administration services should be reviewed and updated as needed or at a minimum, annually.

2.1.2 Procurement

Status:

Several issues involving construction procurement continue to adversely affect the project:

- **C-26008 (C5B): 86th Street Station Cavern & Heavy Civil** – bids were opened on February 4, 2011, at which time the joint venture of SKANSKA Civil and Traylor Bros. was identified as the apparent low bidder with a bid of \$301,860,000. Award of this package is still delayed because of “Buy America” concerns.
- **C-26009 (C6): Transit & Rail Systems** – RFP documents were made available to the qualified proposers on March 7, 2011 and the pre-proposal meeting was held on March 31, 2011. Receipt of proposals has been again delayed from June 29, 2011 to July 29, 2011.

Table 2-1: Construction Procurement

Activity #	Description	Date*	Comment
Contract C-26008 (C5B): 86th Street Station Cavern & Heavy Civil			
C5B 25d	Procurement (IFB) Open Bids	02/04/11A	Forecast award date revised to 08/01/11.
C5B PR40	Award Contract 5B	08/01/11	
Contract C-26009 (C6): Systems			
SYPR 25t	Issue RFP (Step 2)	03/07/11A	RFP Documents were made available to teams whose qualifications were deemed acceptable in Step 1.
SYPR30d	Submit Proposals	07/29/11	Proposal submission again delayed approximately 1 month. Award of
SYPR40	Award Contract	10/27/11	

Activity #	Description	Date*	Comment
			<i>Contract unchanged.</i>
Contract C-26010 (C2B): 96th Street Station Concrete, MEP & Finishes			
This procurement has been postponed by approximately six months as a consequence of construction delays to C2A. Bid date is currently forecast for 01/11/12. Contract award is forecast for 04/23/12. <i>No change to these dates this period.</i>			

* Note: All dates reference IPS Update #59 (Data Date as of 06/01/11) U.N.O.

Observations and Analysis:

- **Contract C-26008 (C5B):** *The current IPS assumes a contract award date of 08/01/11. There is currently no realistic forecast available due to the uncertainty of how and when this matter may be resolved. The impact of this delay is on the project schedule is further discussed in Section 4.3 of this report.*
- **Contract C-26009 (C6):** Receipt of construction proposals was further delayed during June 2011, from June 29, 2010 to July 29, 2011; this extension was reportedly due to numerous requests for an extension from the bidding contractors.

Although receipt of proposals was delayed one month, there was no corresponding delay to the award of this package. The sequencing of the procurement process in IPS Update #58 resulted in approximately one month of schedule float between administrative approval of the contract and the next MTA Board Meeting, where final approval would be ratified. This float was consumed this period and any future delay to proposal submission will result in a corresponding delay to contract award.

- **Future Procurements:** The next construction package scheduled for procurement is C2B (96th Street Structure & Finishes). Advertisement is currently scheduled for October 17, 2011. *There was no change to the forecast procurement dates for this package this period.*

Concerns and Recommendations:

The IPS activities for evaluation, negotiation and processing of C-26009 appear optimistic. The PMOC considers it unlikely that a selection, negotiation and award of a technically complex package of this size can be completed in less than three months. The PMOC recommends the durations for these activities be re-evaluated and a more realistic forecast incorporated into the IPS.

2.1.3 Construction

Status:

There are five (5) active construction contracts on the SAS project. Construction progress on these contracts through *June 2011* includes:

- **Contract C-26002(C1) –TBM tunnels from 92nd Street to 63rd Street**

- Mining of the East tunnel is currently between 75th and 76th Street at Station 1178+88.9. Approximately 4,260 feet mined to date (mining of the East tunnel commenced on 3/21/11).
- Surface preparation work for waterproofing in the West tunnel is ongoing. Shotcrete work commenced 5/17/11.
- Cellar tie work at 1814 is continuing.
- Turnover of instrumentation in 72nd Street Station area is complete. Post-construction surveys still need to be finalized at the shafts.
- Work zone between 94th and 95th Streets turned over to the C2A Contractor
- **Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation**
 - Completed wood pile removal and installation of guide walls at Entrance 3.
 - Con Ed and ECS/Verizon continue to pull & splice cables, deactivating existing systems between 95th and 98th Streets, along 2nd Ave.
 - Commenced removal of abandoned utilities between 95th and 96th Streets in preparation for slurry wall construction.
 - Continued secant pile installation for north, south and west walls of Ancillary #2; (90 of 105 Piles completed as of 6-17-11).
 - Continued Phase I building stabilization at 1802 2nd Avenue.
 - Completed assembly of 2 digging cranes and Gantry crane for Slurry wall work and rebar cage fabrication.
- **Contract C-26006 – (C3) 63rd Street Station Upgrade**
 - CPM Baseline Schedule Rev3 received 6/6/2011 and under review.
 - Detailed Cost Breakdown approved 6/2/2011.
 - Access to Plaza area provided 6/1/2011.
 - Commenced demolition of Plaza and preparing area for temporary sidewalks and MPT setup.
 - Continued work on temporary power/lighting on G3/G4 platforms.
 - Continued Station crack survey, various areas.
 - Commenced DMP (Deformation Monitoring Points) installation.
 - SA Engineering to perform Precondition building survey.
 - Hatzel and Buehler surveyed existing Fan Plant for decommissioning.
 - Xaren (Asbestos Contractor) is mobilizing and setting up containment.
- **Contract C-26007 (C4B) 72nd Street Station Mining and Lining**
 - Main Cavern South -Excavation between 69th St. and just past 70th St. on-going. (69th Street Shaft –center line station 1161+88.19): Center drift excavation progress –

*South (CCS#10) to station 1160+96.38, north to (CCN#45) to station 1165+82.
West slash –South to station 1160+96.38 (SWS#6), North to 1162+44 (NWS#4).*

- *Main Cavern North –Excavation between 72nd and 73rd (72nd Street Shaft –center line station 1169+93.04): Center drift excavation progress –South (CCS#9) to station 1168+93. North to station 1170+14 (CNN#1). West Slash –South to station 1169+56 (SWS#3).*
- *Completed break thru into TBM Tunnel from top heading at 69th and 72nd Street Shaft Areas*
- *Continued installation of site utilities to support excavation and mining*
- *Total rock excavation (69th and 72nd St.) approximately 20,255 BCY as of Friday 6/24/11.*
- *Muck Enclosure (72nd St. Shaft) –Gantry system operational, cladding on-going.*
- *Muck Enclosure (69th St. Shaft) –Steel erection began 6/27/11 and is on-going.*
- *Ancillary 2 –Support of Excavation wall at NW corner at 72nd St. construction on-going (rebar installation, form and pour)*
- *Preconstruction Building Surveys south of 66th Street are on-going*
- *Continued installation of Muck Handling System at 72nd Street Shaft*
- *Completed removal of ACM at Ancillary 2*
- *Completed support-of-excavation (SOE) work on east side of Ancillary #2 and continued SOE work on south side of Ancillary #2*
- *Commenced Building remediation work*
- *Commenced AWO Work for AWO # 3 & # 4.*
- **Contract C-26013 (C5A) 86th Street Station Excavation, Utility Relocation and Road Decking**
 - *Con Edison completed primary & secondary transfer work at South Shaft area. Dead cables remain to be pulled. Primary cable transfer work completed at North Shaft area.*
 - *South Shaft:*
 - *Completed rock excavation on west side. JDSI set deck panels, switched work zone to east side of 2nd Ave completing soldier piles installation*
 - *JDSI started breaking out and removing existing dead Con Ed cables at SE area as AWO to mitigate Con Ed delays due to lack of removal of old primary/secondary cables.*
 - *North Shaft:*
 - *JDSI continued breaking out existing primary and secondary cables at North Shaft as AWO work to mitigate delay to the installation of cap beams and soil excavation.*

Observations:

Key elements of work or issues requiring resolution in the near future to avoid delays to the work are described below.

For Contract C1 - As of June 28, 2011, TBM progress is summarized as follows:

Second Avenue Subway TBM Summary - PMOC Projection									
Date	Station	Total Progress	Unit	Period Progress	Work Days/Period	Progress/Period	Unit		
Actual	6/8/10	Sta. 1221+89	0.0		261.0	16	16.31	LFWD	
	6/29/10	Sta. 1219+28	261.0	LF	374.2	22	17.01	LFWD	
	7/29/10	Sta. 1215+02	635.2	LF	1292.8	18	71.82	LFWD	
	8/31/10	Sta. 1202+61	1928.0	LF	1054.0	17	62.00	LFWD	
	9/29/10	Sta. 1192+07	2982.0	LF	769.0	24	32.04	LFWD	
	11/2/10	Sta. 1183+85	3751.0	LF	877.0	20	43.85	LFWD	
	11/30/10	Sta. 1175+09	4628.0	LF	368.0	4	92.00	LFWD	
	12/6/10	Sta. 1171+93	4996.0	LF	392.0	6	65.33	LFWD	
		Original limit, TBM-1							
	12/14/10	Sta. 1167+48	5388.0	LF	883.5	18	49.08	LFWD	
	1/9/11	Sta. 1158+65	6271.5	LF	943.5	12	78.63	LFWD	
	2/4/11	Sta. 1150+00	7215.0	LF	Completion of TBM-1 (West Bore)				
	TBM-1 TOTALS		7215.0	LF		157	45.96	LFWD	
	2/4/11	Extract & Remove TBM					45		
	3/21/11	Sta. 1221+49	0.0	LF	283.0	11	25.73	LFWD	
	4/5/11	Sta. 1218+66	283.0	LF	833.0	18	46.28	LFWD	
	4/30/11	Sta. 1210+33	1116.0	LF	1726.0	24	71.92	LFWD	
	6/1/11	Sta. 1193+07	2842.0	LF	1418.0	19	74.63	LFWD	
	6/28/11	Sta. 1178+88	4260.0	LF	3567.0	71	50.11		
	10/5/11	Sta. 1143+80	7827.0	LF					

- *During June 2011, TBM mining progress has generally exceeded estimated production rates, resulting in a slight improvement in the PMOC forecast completion date of October 5, 2011. This forecast compares favorably with the forecast completion date of October 27, 2011 contained in IPS Update #59. The PMOC forecast does not include holidays and similar non-work periods.*
- *Remediation plan required to rectify deficient concrete (honeycombing) in ground freeze zone interliner still need to be resolved.*
- *Shotcrete surface preparation in TBM-1 West backfill grouting of voids.*
- *TMM-1 West tunnel alignment and profiling surveys needs to be submitted.*
- *Temporary support at the pump room.*
- *SSK blasting notification to S3.*
- *Deletion of East Bore (72nd to 86th Streets) Concrete Lining. Time savings proposal submitted by S3TC and is under review.*
- *S3TC timely completion of CIP Lining in West Tunnel to support CIP Lining Work in the East Tunnel.*
- *S3TC submission of Composite TIA that includes AWO #103 (Ground Freezing), AWO #92 (TBM Extension), AWO #114 (Mining through freeze zone), and AWO #112 (CIP Lining Deletion).*
- *S3TC turnover of Work Zone area between 93rd and 94th Streets to C2A.*
- *S3 submission of Recovery Schedule.*

For Contract C2A:

- *Completing ECS MH modification at interference with slurry wall panels at 95th and 96th Streets. Water control/basal stabilization issues – Contractor proposals under review by DHA.*
- *Completion of Critical Con Edison and ECS/Verizon work west side 2nd Ave, 95th to 96th Streets.*
- *Utility conflicts at Entrance 1, Entrance 2 and Ancillary 1. Gas services re-designed. DHA design for sewer and ECS in process*
- *High rock issue at Ancillary 1; Majority of issue mitigated by adjusting primary secant pile elevations and modifying drilling procedures.*
- *Building 1802 – repair east wall/façade, complete underpinning and timely relocation of tenants back to the apartments*

For Contract C3:

- *• Contractor Access to Pookie & Sebastian's (Entrance#1) for installation of Instrumentation.*
- *Completion and acceptance of Contractors Detailed Baseline Schedule.*

For Contract C4B:

- *Blasting Production Rate*
- *Negotiation and execution of AWO #5 at Entrance 1 for MEP utility relocation work within 301 East 69th Street Condominium*
- *Completion of Building remediation prior to blasting within 100ft of the buildings at 72nd St Station cavern area*

For Contract C5A:

- *Completion of Con Edison work including;*
 - *Secondary cables work at North Shaft to facilitate Shaft excavation.*
 - *Removal of existing dead cables at southeast Shaft to facilitate Shaft excavation.*
- *Removal of ECS/Verizon cables crossing South East Shaft to facilitate Shaft excavation.*
- *Remediation work at 4 Bldgs. on the west side near 83rd Street prior to blasting operations for South shaft. Complete first 2 buildings by 6/10/2011 and remaining 2 buildings by 7/8/2011.*
- *Coordination of blasting operations at North and South Shafts with CI for concurrent TBM mining and CIP concrete lining placement.*

Concerns and Recommendations:

The SAS Project Team continues to address construction problems and prioritize those issues which have the potential to delay the project. No concerns this period.

2.1.4 Force Account (FA) Contracts

Status:

During June 2011, no additional MTA Force Account expenditures were made. Total expenditure remains at \$344,154.

Observation:

Force account involvement in the project has been very low to date. A substantial portion of Contract 3 will be performed during "General Outages". This will be the first significant Force Account expenditure.

Concerns and Recommendation:

None

2.1.5 Operational Readiness

Status:

NYCT has developed a Concept of Operations Plan for the SAS Project. Operational Readiness will be validated during NYCT's Pre-Revenue Service testing scheduled from March 21, 2016 to June 15, 2016. No update this period.

Observation:

The specific tests with its associated durations that NYCT will perform during Pre-Revenue Service testing are not identified on the IPS.

Concerns and Recommendation:

None

2.2 Third-Party Agreement

Status:

No change this period.

Observation:

None

Concerns and Recommendation:

None

2.3 Contract Packages and Delivery Methods

Status:

Phase 1 of the Second Avenue Subway will be delivered via ten separate construction packages. All construction contract packages will be delivered through a design-bid-build process utilizing a fixed price construction contract. Competitive procurements are based on NYCT standard procedures.

There was no change to the delivery method for any of the construction packages during the second Quarter of 2011. Specific procurement procedures for each open construction contract package and its current status are shown in the following table.

Table 2-1 Construction Procurement Method and Status

<i>Pkg.</i>	<i>Contract</i>	<i>Description</i>	<i>Procurement</i>	
			<i>Type</i>	<i>Status</i>
<i>C2B</i>	<i>C-26010</i>	<i>96th Street Station: construction of the entrances and ancillary facilities, architectural finishes and MEP equipment.</i>	<i>IFB</i>	<i>Design Completed</i>
<i>C4C</i>	<i>C-26011</i>	<i>72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.</i>	<i>IFB</i>	<i>Design Completed</i>
<i>C5B</i>	<i>C-26008</i>	<i>86th Street Station: construction of the station cavern, entrances and access shafts.</i>	<i>IFB</i>	<i>Bids Received</i>
<i>C5C</i>	<i>C-26012</i>	<i>86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.</i>	<i>IFB</i>	<i>Design Completed</i>
<i>C6</i>	<i>C-26009</i>	<i>Power, Signals and Communications; includes the</i>	<i>RFP</i>	<i>Proposals</i>

Pkg.	Contract	Description	Procurement	
			Type	Status
		installation of track, 3 rd Rail traction power, way-side signals, and all communication components, integration of the communication network with the NEP SCADA system and commissioning the system for revenue service.		due 7/29/11

Observation:

Construction procurement has been problematic over the past 15 months. Significant delays have been encountered during the procurement of construction packages C4B, C3, and C5B and C6. As the overall project schedule is generally compressed, the project's ability to absorb procurement delays without major schedule impact is reduced.

Concerns and Recommendations:

PMOC recommends the SAS Project Team consider creating additional schedule contingency for the station finish packages (C2B, C4C and C5C). While this allocation of float is contrary to the current IPS management philosophy, it would assist in preventing future procurement impacts to the project schedule. This can be implemented in several ways:

- *Establish the award date as an interim milestone date and increase the duration of the procurement period through embedding a dummy activity or lag within the procurement chain of activities.*
- *Force the start of the procurement process prior to the date currently shown in the IPS.*

Either approach should have the effect of starting the procurement process earlier and provide a schedule contingency against the seemingly inevitable delays.

2.4 Vehicles

Status:

No change in status this period

Observations:

None.

Concerns and Recommendations:

None.

2.5 Property Acquisition and Real Estate

Status:

The temporary residential relocation from 1802 2nd Avenue will be extended until the end of September 2011 due to construction delays arising from the discovery of unexpected structural issues in the building.

Agreement with property owner of 3 commercial spaces in 301 E 69th St. is almost complete. Upon completion of owner agreement, tenants will be contacted about temp closure.

Observation:

The following properties were vested on June 7, 2011:

Contract 3:

1. 128 E 63rd St – TE - Air space above building needed for crane maneuvering.
2. 124-126 E 63rd St – PE/TE in garage for rooftop mounted cooling tower. Closure and access agreement being negotiated.
3. 200-201 E 63rd St – PE/TE for entrance – commercial relocation required. Cost to cure agreement being negotiated.

Contract 5:

250 E 87th St – PE/TE needed for ancillary facility. Cost to cure construction agreement being finalized.

Remaining property acquisition:

Contract 3:

186-188 64th St – court date scheduled for July 12, 2011

Contract 4:

233 E 69th St – Lawsuit dismissed 6-6-11, waiting 60 day appeal period to vest title to remaining property.

Yorkshire Towers lawsuit – Contract 5 - MTA and plaintiff have settlement meeting scheduled on July 14, 2011. MTA to respond to Supplemental Environmental Assessment complaint by July 25, 2011. No property acquisition associated with existing design.

Second Avenue Subway – Property Acquisition Summary

# of Parcels Identified	# Parcels Closed	# Parcels Under Contract	# Parcels In Negotiation	# Parcels In Appraisal	# Parcels In Condemnation	# Parcels Right of Occupancy
95	93	0	2	0	94	88

Concerns and Recommendations:

Continue to monitor cost and schedule. Conduct on site meetings to review cost to complete of all real estate activities 3rd Quarter 2011. File audit and OP23 review recommended by end of 2011.

2.6 Community Relations

Status:

During the second two weeks of June 2011, numerous community complaints were registered pertaining to dust and noxious odors, allegedly emanating from the SAS construction sites. Prior to this period, there were no significant complaints from the local community pertained to excessive dust or offensive odors.

Observation:

As of the writing of this report, the source(s) of these issues had not been conclusively identified and the matter has not been resolved.

Concerns and Recommendations:

Prompt resolution of this issue is recommended.

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

Status:

The PMOC has completed its review of the Revision 8 submission of the draft SAS PMP (dated January 2011). The PMOC will present the results of its review to the FTA. Upon FTA's concurrence with the PMOC's findings and recommendations, the results will be transmitted to the MTACC SAS Project Team.

Observations:

In general Revision 8 of the SAS PMP was updated in accordance with the "PMP Update" process defined in the ELPEP. Candidate Revisions were issued and approved by the Technical Advisory Committee for all "Material Decisions", i.e., project decisions that affect scope, cost, schedule or funding.

Concerns and Recommendations:

None at this time

3.1 PMP Sub Plan

Status:

As part of the PMP review, the referenced Sub-Plans have been reviewed to confirm their conformance and consistency with the PMP.

Observations:

SAS Sub-Plan documents consist of: Project Quality Manual, Quality Assurance Plan, Risk Management Plan, Design Criteria Manual, Cost Management Plan, Schedule Management Plan, Project Design Quality Manual, Real Estate Acquisition Plan, Real Estate Acquisition Management Plan, Contingency Management Plan, and Quality Implementation Procedure.

Concerns and Recommendations:

None

3.2 Project Procedures

Status:

No change in status this period.

4.0 PROJECT SCHEDULE STATUS

4.1 Schedule Status

Status:

IPS Update #59 was received on July 7, 2011 and is based on a Data Date of June 01, 2011. Update #59 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports. Project schedule completion milestone dates remained essentially unchanged for this period; however MTACC now forecasts completion of all construction on 10/25/16, with 67 calendar days of contingency until its committed RSD of 12/30/16.

Table 4-1: Summary of Schedule Dates

	FFGA	Forecast Completion	
		Grantee	PMOC
<i>Begin Construction</i>	<i>January 1, 2007</i>	<i>03/20/2007A</i>	<i>03/20/2007A</i>
<i>Construction Complete</i>	<i>December 31, 2013</i>	<i>May 23, 2016</i>	<i>October 2017</i>
<i>Revenue Service</i>	<i>June 30, 2014</i>	<i>December 30, 2016</i>	<i>February 2018</i>

During the month of May 2011, progress continued on five (5) active construction packages:

- C-26002 (C1) TBM Tunneling and 96th Street Box,
- C-26005 (C2A) 96th Site Work and Heavy Civil,
- C-20006 (C3) 63rd Street Station Rehabilitation
- C-26013 (C5A) Open Cuts and Utility Relocation, and
- C-26007 (C4B) 72nd Street station Cavern mining & Lining.

No major additions, deletions or significant changes were made to the schedule during May 2011. Changes were limited to routine updating to reflect the current status of the ongoing activities

The IPS is a management level schedule that integrates all ten construction packages along with design, procurement, startup and other support activities. The current IPS update of June 1, 2011 indicates that the project is on schedule to achieve an RSD of December 30, 2016 and has 67 calendar days of float. Five of the ten contracts are in construction and the status of individual construction contracts is illustrated in the table below.

Table 4-2: Summary Schedule Performance by Construction Package

<i>Pkg. #</i>	<i>Award Date</i>	<i>Contract S/C</i>	<i>Upd. #58 Forecast S/C</i>	<i>Upd. #59 Forecast S/C</i>	<i>% Complete</i>	<i>Status</i>	<i>Monthly Change (+/-)</i>
C1	3/20/07	7/20/10	3/30/12	02/08/12	85.4%	+82 Weeks	-7 Weeks
C2A	5/28/09	01/07/13	5/26/13	05/28/13	35.8%	+20 Weeks	- 2 Days
C2B	Future	7/22/15*					
C3(4)	1/13/11	5/13/14	5/14/14*	05/14/14	1.8%	On Schedule	0 Weeks
C4B	10/1/10	10/31/13	12/04/13	12/16/13	12.6%	+6 Weeks	+2 Weeks
C4C	Future	3/18/15*					
C5A	7/9/09	1/7/11	10/13/11	10/20/11	71.7%	+38 Weeks	+1 Weeks
C5B	Future	3/25/14*	6/23/14*	7/22/14	0.0%	+16 Weeks	+4 Weeks
C5C	Future	10/6/15*					
C6	Future	07/15/16*					

1. * Denotes MTACC estimated dates based upon preliminary schedules.
2. Monthly Change reflects schedule gain/loss over most recent reporting period. Negative sign denotes time gain and positive sign denotes time loss.
3. The contracts marked as Future have not been bid or awarded.
4. The Contract 3baseline schedules has not been incorporated into the IPS. There is no baseline against which to measure actual progress.

Observations and Analysis:

At the request of the FTA, the PMOC has initiated quarterly tracking of major schedule activities and/or "milestones" that are in progress during that quarter as a means of reviewing and evaluating the project's ability to achieve short-term schedule goals. Due to the one-month lag in reporting schedule update progress, the 2nd Qtr. 2011 baseline and intermediate results are published in this report and shown in the following table.

Table 4-3: Quarterly Schedule Target Comparison

Second Avenue Subway							
Quarterly Schedule Milestone Progress Review							
Phase	Act #	Description	IPS Upd. #57 DD=04/01/11	IPS Upd. #59 DD=06/01/11	Difference (CD)	Info Source	
Active Construction	C-26002; TBM Mining						Schedule based on Contractor's CPM Schedule
	S9100c	Mine East Tunnel; 83rd Street Shaft to 72 nd St. X-Over	02-Sept-11	29-Jul-11	-35		
	S6A40	Start Tunnel 1 "West" Conc. Launch Box to North Side of 86th Street Station.	05-Jul-11	04-Aug-11	67		
	C-26005; 96th Street Station – Site Work/Heavy Civil						
	A217	Complete SOE Wall/Secant Pile Installation @ Ancil #2	16-Jul-11	15-Jul-11	-1		
	4S200	Start Stage 4 Slurry Wall Installation 95 th -> 97 th Streets; West Side	16-Jun-11	01-Aug-11	46		
	C-26013; 86th Street Station – Utility & Site Work						
	4S120	Comp. Excavation/Lagging @ SE Pit	29-Jul-11	29-Jun-11	-30		
	HO2	C5A->C5B Handoff; Mech. Mining @ North Shaft	15-Aug-11	01-Sep-11	17		
	C-26007; 72nd Street Station – Cavern Exc./Heavy Civil						
	G3S11005	Begin G3/S1 Cavern 2 Excavation	29-Jul-11	08-Jul-11	-21		
ANC1000	Complete Asbestos Abatement.	19-Jul-11	29-Jul-11	+10			
Procurement	C-26008; 86th Street Station - Cavern Exc./Heavy Civil						Prelim MTACC Schedule
	PR40	Award Contract	29-Mar-11	01-Aug-11	+125		
	C-26009; Rail & Station Systems						
	SYPR30d	Submit Proposals	03-Jun-11	29-Jul-11	+56		
SYPR40	Award System Contract	29-Sep-11	27-Oct-11	+28			
1. "Baseline" schedule for this quarter is Update #57; DD=04/01/11 2. Elapsed time = 04/01/11 to 06/01/11 = 61 CD 3. Negative (-) value indicates current date is earlier date than baseline							

Concerns and Recommendations:

Based upon QTR #2, 2011, schedule progress to date:

- Delays to the start of tunnel lining (Contract C1) continue, while TBM production generally continues to exceed forecast rates. Completion of tunnel lining now controls the completion of this package.
- Delays impacting the award of construction package C5B have not been resolved.

The current delay in award of the C5B package has become a controlling delay for the overall project and is impacting the Revenue Service Date. Resolution of this matter must be given priority.

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update#59 (DD=06/01/11), major activities that can be anticipated to either start or complete over the upcoming 90 days include the following:

Table 4-4: 90-Day Look-Ahead Schedule

Activity ID	Start	Finish	Note
C1- TBM Construction – Tunnel 96th Box (91st to 95th)			
Completion of TBM-2 (East) to the 72nd St. X-over	05/03/11A	07/29/11	1.
West Bore Concrete – 72 nd St X-Over to 86 th St. Station	06/22/11	09/15/11	
C2A – 96th Street Station Sitework& Heavy Civil			
Complete Stage 2 Utility Work (95 th – 99 th Streets)		06/29/11	2.
Stage 4 Slurry Walls Complete; 95 th ->99 th Streets	06/30/11	11/28/11	
SOE/Secant Pile Installation – Ancillary 2	01/15/11A	07/15/11	
Stage 4 Slurry Panels @ Ent. #3	07/11/11	10/13/11	
C2B – 96th Street Station Concrete, Finishes & Utilities			
Authorization to Advertise	09/23/11	09/29/11	
C4B – 72nd Street Station Mining & Lining			
Complete 72 nd Street Muck Handling Sheds		07/29/11	3
Ancillary 2 – Asbestos Abatement	01/31/11A	05/26/11A	
Ancillary 2 – Demo Existing Bldg.	06/01/11	08/11/11	
Ancillary 1 – Asbestos Abatement	04/25/11A	07/29/11	
G3/S1 Cavern 2 – Construct Access	06/02/11	06/27/11	
C5A-86th St. Station Sitework			
Drill/Blast/Exc. SE Pit	06/30/11	09/27/11	4
North Shaft available for Mechanical Mining (C5B)		09/01/11	
SUBSTANTIAL COMPLETION		10/20/11	
C5B – 86th St. Station Mining & Lining (IFB)			
Contract Award		08/01/11	5

Activity ID	Start	Finish	Note
C6 – Systems (RFP)			
<i>Submit Proposals</i>		07/28/11	6
<i>Proposer Presentations</i>	08/15/11	08/29/11	
<i>Negotiate with Selected Proposers</i>	09/01/11	09/12/11	

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *TBM production continues to exceed forecast. Delays have been encountered in the start of tunnel lining.*
2. *Utility work is generally complete. Focus of this package will shift to support of excavation systems and excavation for station.*
3. *Full excavation production is dependent on completion of the muck handling sheds, both of which are currently under construction.*
4. *Utility interferences, primarily involving Con Ed, continue to delay portions of the work.*
5. *MTACC current forecast date of award.*
6. *Additional 1 month delay in submission of proposals.*

Concerns and Recommendations:

Over the next 90-day period, significant project events include:

1. *Package C2A is transitioning from the utility relocation work to the support of excavation and excavation/decking work that is the primary scope and purpose of the package. The overall rate of construction progress can be expected to increase.*
2. *Package C5A nearing substantial completion, eliminating several constraints on C5B site access.*
3. *Package C4B is developing available work in the ancillaries and mechanically mined tunnel sections while the TBM passes through and operates south of the 72nd Street Station.*

4.3 Critical Path Activities

Status:

As depicted in Update #59 of the Integrated Project Schedule, the critical path is initiated by pre-award activities leading to the award of Construction Package 5B (86th Street Cavern & Lining). As discussed elsewhere in this report, award of this package has been delayed. Immediately following award, the first construction activity, C5B-S110b, Excavate South Shaft plus Anc. 1 for Top Heading – Blasting, is not allowed to start until 01-May-2012. This ten-month lag represents the “No Blast Restriction” contained in the C5B bid documents and results from the NYFD restriction on blasting while the C1 TBM is south of the potential blast area,

thereby creating a potential entrapment situation. This ten-month lag was added in IPS Update #57 and discussed in the April 2011 PMOC Monthly Report as a partially concurrent critical path and became critical in IPS Update #58 and was documented in the May 2011 PMOC monthly report. As a result of the passage of an additional month, these activities have displaced C5A as the initial activities on the critical path and have resulted in an additional delay to the calculated completion of all construction from 26-Sept-2016 to 25-Oct-2016.

Observations:

As presented in Update #59 of the IPS, the most critical, independent paths on the project are:

- The critical path is initiated by the completion of the C5B construction procurement process, using MTACC's current forecast Notice of Award (NOA) date of 01-Aug-11. The path then travels directly into cavern excavation from the South Shaft after release of the contractual Access Restraint (NOA+10 MO or 31-May-12) for blasting. The critical path then continues through completion of C5B Cavern mining and concrete waterproofing and lining installation at the south end of the 86th Street Station (Milestone No. 1). Upon achieving MS #1 on early March 5, 2014, the critical path shifts to Package C5C mezzanine and platform concrete work, followed by construction of Ancillary 1 and signal, traction power and station MEP work. Local and integrated systems testing starts on December 16, 2015 and extends through August 2016. NYCT Pre-Revenue Testing starts in June 2016 and controls the completion of all work, which is currently forecast for October 25, 2016.
- There are numerous secondary paths, with float values between 1 and 59. All of these paths are derivatives of the critical path and involve C5B Cavern construction or C5C Station Finish/MEP construction.
- It is noted that these schedules are based on MTACC preconstruction schedules. There is significant overlap of activities within these paths. The actual paths, based on the construction contractor schedule, may be significantly different.
- The next most critical path, with float of 61 starts with C5A support of excavation and excavation at the South Shaft and extends through the substantial completion of the C5A Package. This path then shifts to C5B via the handoff at the south shaft. The flow of C5B work primarily follows C5B underpinning, excavation and construction of Entrance #1, C5C interior construction and systems work at which point this path rejoins the critical path.
- The third most critical path starts with C2A slurry wall installation, excavation and excavation; followed by C2B station construction, station MEP, systems installation and testing. This path has 78 days of float.
- Remaining work for the TBM (C1) Package has 109 days of float.
- The Systems Package (C6) procurement initiates a path with 130 days of float.

Concerns and Recommendations:

The C5B construction procurement delay may represent an "opportunity in disguise". Significant delay on any schedule float path typically creates float on other paths. This float can be seen as a resource to be used in resolving issues involving a time/cost tradeoff in a manner which maximizes benefit to the project. The delays to C5B contribute to the project team's

ability to extend the proposal period for C6 and absorb utility-related delays on C5A without consequential schedule acceleration, additional cost or additional delay to the RSD.

The PMOC recommends these tradeoffs be documented and reported as secondary cost mitigation in accordance with Section IV.b. of the ELPEP.

The PMOC remains concerned about the current IPS level of detail to reasonably represent rail and station systems preconstruction engineering and submittal activity. The PMOC recommends a review of the results of the package risk assessment with respect to this element of the project and review of the adequacy of the time allocated in the IPS.

4.4 Compliance with Schedule Management Plan

Status:

In August 2010, the PMOC has established a structured review of the MTACC's compliance with its Schedule Management Plan, developed as part of the overall ELPEP process. *The PMOC will continue this compliance review until the MTACC undertakes the role of ELPEP compliance reporting and verification.*

Observations and Analysis:

Schedule Management Plan compliance is based upon achieving four (4) "Beneficial Outcomes" identified in the ELPEP and related documents.

1. Establish the IPS' usefulness as a management tool for the planning and organizing the work, and as a decision support tool for evaluation of alternatives and risk-based scenarios.
2. MTACC is actively managing and controlling individual packages and the overall project with input from and consideration of the project schedule.
3. Provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments.
4. Facilitate communication of project time-related information, priorities, issues, and changes, as may be required.

Specific Processes, Products and Metrics cited in the ELPEP and companion documents, supporting each "Beneficial Outcome" have been summarized and grouped in a worksheet. A summary of the review conducted this period:

- *MTACC "Conforms" to 20 of 24 performance measures.*
- *MTACC "Does Not Conform" to 4 of 24 performance measures.*

Concerns and Recommendations:

In general, the PMOC notes that MTACC is realizing the beneficial outcomes established by the ELPEP. Based upon this analysis, the MTACC's IPS currently "Conforms" to the Schedule Management requirements established by the ELPEP.

Specific concerns and recommendations include:

- *Reliable forecast of the RSD. This current approach to modeling the C5B procurement delay has impacted the RSD beyond the limit that best available information supports.*

As presented, the IPS is a historical/litigation support presentation of an intermediate result, not a forecast using all available information and evaluation.

5.0 PROJECT COST STATUS

5.1 Budget/Cost

Status:

The FFGA baseline budget and current working budget are broken down into Standard Cost Categories in year of expenditure dollars as follows:

Table 5-1: Allocation of Current Working Budget to Standard Cost Categories

Std. Cost Category (SCC)	Description	FFGA	MTA's Current Working Budget
10	Guideway& Track Elements	\$612,404,000	\$728,617,000
20	Stations, Stops, Terminals, Intermodal	\$1,092,836,000	\$1,276,632,000
30	Support Facilities	0	\$562,000
40	Site Work & Special Conditions	\$276,229,000	\$537,621,000
50	Systems	\$322,708,000	\$247,627,000
60	ROW, Land, Existing Improvements	\$240,960,000	\$292,000,000*
70	Vehicles	\$152,999,000	0**
80	Professional Services	\$796,311,000	\$885,941,000
90	Unallocated Contingency	\$555,554,000	\$482,000,000
Subtotal		\$4,050,000,000	\$4,451,000,000
Financing Cost		\$816,614,000	\$816,614,000
Total Project		\$4,866,614,000	\$5,267,614,000

* Includes \$47M Cost-to-Cure ** FTA has not approved the removal of the vehicles from the scope of work.

Observation and Analysis:

Total construction expenditures in June 2011 equaled \$27,124,795, or approximately .96% of the total project construction scope. The PMOC estimates that 18.9% of all construction is complete. At an average rate of 1%/Month, it will take approximately 71 months to complete this project resulting in a forecast completion date in May 2017.

Total soft cost expenditures in June 2011 equaled \$5,727,239, or approximately .49% of the total soft cost budget. Assuming the 71 month remaining project duration estimated in the previous paragraph to be reasonable, the soft cost ETC can be estimated as:

$$71M \times \$5,727,239/M = \$406,633,969$$

This value compares favorably with the \$432,490,660 soft cost balance remaining.

For the active construction contracts, AWOs to date are summarized as follows:

Table 5-2: AWO Summary

Contract	% Complete	Award	Exposure		Notes
			\$	% of Award	
C26002 (1)	85.4%	\$337,025,000	\$44,430,248	13.18%	AWO#92 is included in this evaluation
C26005 (2A)	35.8%	\$325,000,000	\$15,016,339	4.62%	Options 1 & 2 included in award value
C26013 (5A)	71.7%	\$34,070,039	\$8,562,231	25.13%	
C26007 (4B)	12.6%	\$447,180,260	\$2,303,939	.52%	
C26006 (3)	1.8%	\$176,450,000	\$21,500	.01%	
TOTAL	39.0%	\$1,319,725,000	\$70,334,257	5.33%	

The rate at which AWOs have been identified has significantly reduced over the recent past. This should be the result of reduced geotechnical and utility interference risks.

Conclusions and Recommendations:

A review of costs incurred by the project to date suggests the following:

1. Based on the current rate of construction progress, a forecast completion date that is approximately 1 year beyond the current schedule forecasts. The PMOC considers a nominal increase in the rate of construction progress to be likely, reducing the variance between these forecasts.
2. Soft cost expenditures that are generally consistent with the current construction rate of progress. At the current rate of expenditure, the remaining soft cost budget can support the forecast construction duration.
3. Substantial changes in the soft cost expenditures can be anticipated, particularly if the rate of construction progress increases.

The PMOC recommends continuing review and analysis of the actual expenditures vs. the project budget in an effort to identify potential problems and negative trends and promote mitigation strategies.

5.2 Cost Variance Analysis

Status:

Using the MTACC financial reporting format contained in its Capital Construction Reports, the PMOC prepared an independent Estimate-At-Completion (EAC) for Phase 1 of the Second Avenue Subway Project. This estimate is based on the following:

- The results of MTACC's draft cost estimate (Revision 8) for the project and the subsequent validation study.
- Cost information provided by the SAS project team through established periodic reporting.
- A risk-based evaluation by the PMOC. Each category of cost was evaluated. Risks of future cost growth were evaluated based upon level of completion, inherent volatility and project history. Low, medium and high levels of risk mitigation were considered.
- The assumed award of the C5B construction package to the identified low bidder.

Observation and Analysis:

During June 2011, no events were observed that would significantly affect the EAC. The PMOC's previous Estimate-At-Completion for the SAS (Phase 1) project is summarized as follows:

EAC w/High Mitigation: \$4,075,902,142

EAC w/Medium Mitigation: \$4,332,400,000

EAC w/Low Mitigation: \$4,604,444,978

Conclusions and Recommendations:

Based on the information available, the PMOC's EAC essentially validates the reasonableness of the MTACC's Current Working Budget of \$ 4.451B. This effort will be revisited periodically, to incorporate updated information and evaluate its effect on the overall EAC.

5.3 Project Funding Status


Status:

Total Federal participation is currently \$1,350,692,821. Appropriated, obligated and disbursements are shown below:

Table 5-3: Appropriated and Obligated Funds (Federal)

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru June 30, 2011
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru June 30, 2011
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$167,810,300
NY-03-0408-06	\$274,920,030	\$274,920,030	\$75,594,548
NY-03-0408-07	Pending	Pending	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$78,870,000
NY-95-X009-00	\$25,633,000	\$25,633,000	\$8,652,432
NY-95-X015-00	\$45,800,000	\$45,800,000	0
Total	\$628,911,200.00	\$628,911,200.00	\$366,805,150.00

* Denotes American Recovery and Reinvestment Act (ARRA) funds

Local funds totaling \$914,227,178 (\$1,281,032,328– 366,805,150) have been spent as of June 30, 2011. MTA's approved 2000-2004 and 2005-2009 Capital Programs provided \$2,964 million for SAS Phase 1 (\$1,050 million and \$1,914 million respectively). The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase 1 project. Of the \$1,487 million, \$545 million was approved for the 2010-2011 timeframe. MTA needs to approve \$942 million for the 2012-2014 timeframe.

Observation and Analysis:

Concern over the availability of [redacted] local [redacted] funding has prompted considerable speculation regarding the future of the project. SAS has available funds to award scheduled procurements through mid-2012 (C2B). There have been no updates concerning the status of project funding during June 2011.

Concerns and Recommendations:

The availability of funds and its impact on the manner in which the project progresses is a key concern for all parties. As part of the proposed amendment of the SAS FFGA, local funding sources should be identified and committed to by the MTA. PMOC will continue to monitor the situation and assist all parties in evaluating the funding situation.

6.0 PROJECT RISK

6.1 Initial Risk Assessment

No change this period.

6.2 Risk Updates

Status:

No updates for this period.

6.3 Risk Management Status

Status:

No updates for this period

Observation and Analysis:

No updates for this period

Conclusions and Recommendations:

None.

6.4 Risk Mitigation Actions

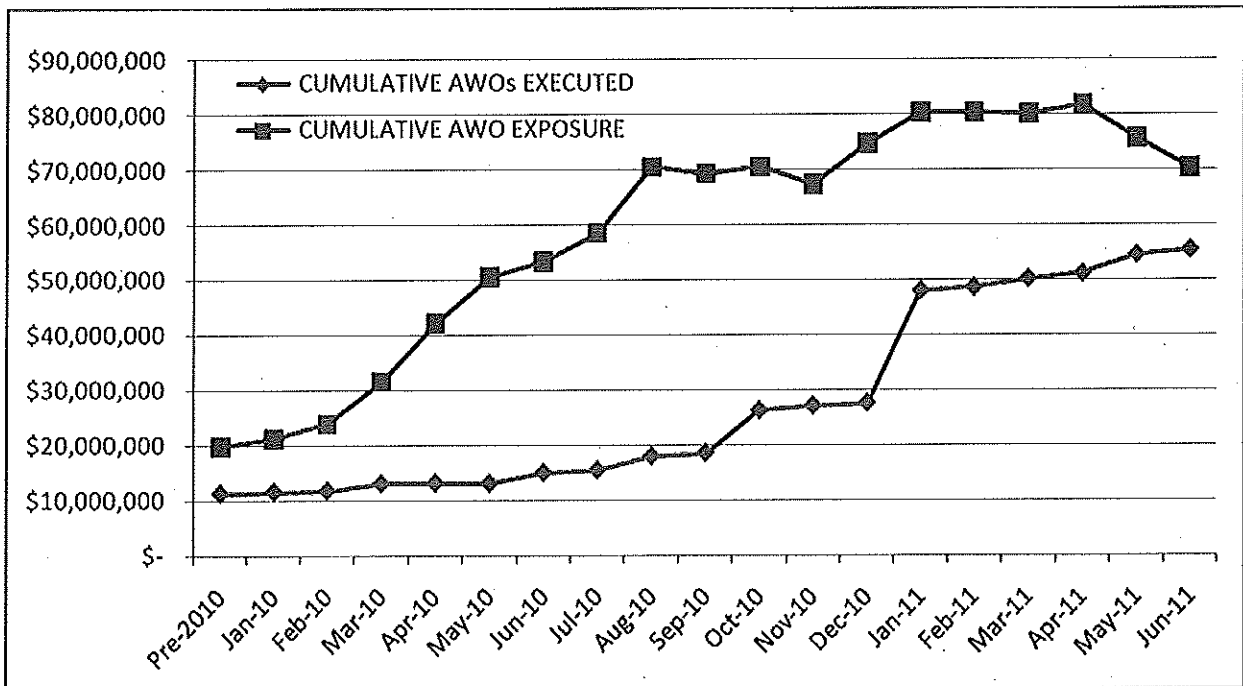
Status:

Mitigation of construction risk is an ongoing process. Prompt and equitable handling of contract modifications can be an effective way to mitigate the risk of consequential cost growth. In recent months, the MTACC has implemented certain staffing changes and process improvements directed at reducing the time required to estimate, negotiate and administratively process Additional Work Orders (AWOs).

The PMOC is monitoring and evaluating the quantifiable indicators associated with AWO processing in an effort to evaluate the effectiveness of the MTA's improvement efforts.

Observation:

The PMOC monitors cumulative AWO Exposure and Executed AWOs, as reported by the project team and NYCT on a monthly basis. The relationship between these two indicators is shown in the following graphic:



The convergence of these two values, indicating a reduction in the gap between outstanding and executed AWOs may be an indication that the previously discussed corrective actions are beginning to have a positive impact. However, it is noted that this convergence is primarily due to a significant reduction in AWO Exposure of almost \$10M between April and June of 2011. The rate at which AWOs are processes has remained relatively constant over 2011.

The value of AWOs reported by NYCT in May and June are summarized as follows:

	<u>Executed AWOs</u>	<u>AWO Exposure</u>
Jun-11	\$55,413,974	\$70,334,257
May-11	\$54,501,468	\$75,684,135
	\$912,506	\$(5,349,878)

The reduction of over \$5M in AWO Exposure is not typical of the project history and is primarily the result of the reduction of the Contract C-26005, 96th Street Station Substructure AWO Exposure by \$7,640,082. These reductions include:

AWO #	DESCRIPTION	Jun-11		May-11		Difference
		AWO STATUS	POTENTIAL EXPOSURE (Approved, Pending or Future)	AWO STATUS	POTENTIAL EXPOSURE (Approved, Pending or Future)	
39	Relocate Cellar Doors at 1817 2nd Avenue	F	\$141,820	F	\$153,749	(\$11,929)
48	Schedule Resequencing Plan (time and direct costs)	F	\$340,929	F	\$6,577,396	(\$6,236,467)
51	Changes due to Sewer Amplified Drawings, Relocation of Blow-Off Manhole and Miscellaneous Field Issues	F	\$274,251	F	\$0	\$274,251
52	8" Gas Crossing at 95th Street	F	\$510,561	F	\$566,958	(\$56,397)
54	Gas Amplifying Drawings	F	\$465,822	F	\$0	\$465,822
66	ECS/Sewer Conflict at Former 98th St.	F	\$1,348,927	F	\$1,537,586	(\$188,659)
78	Underpinning at Building 1802 2nd Ave. and 305 93rd	F	(\$68,112)	F	\$1,929,591	(\$1,997,703)

AWO #	DESCRIPTION	Jun-11		May-11		Difference
		AWO STATUS	POTENTIAL EXPOSURE (Approved, Pending or Future)	AWO STATUS	POTENTIAL EXPOSURE (Approved, Pending or Future)	
	<i>St. (Phase II)</i>					
81	<i>Relocate Cellar Doors at 1814 2nd Avenue</i>	<i>P</i>	<i>\$92,500</i>	<i>F</i>	<i>\$0</i>	<i>\$92,500</i>
86	<i>Replace Emergency Exit Steps at 102nd Street</i>	<i>P</i>	<i>\$18,500</i>	<i>F</i>	<i>\$0</i>	<i>\$18,500</i>
						<i>(\$7,640,082)</i>

Concerns and Recommendations:

The preceding evaluation suggests a marginal improvement in AWO processing during June 2011. The PMOC is concerned that some of this improvement represents artificial deflation of the forecast cost of future AWOs. The PMOC will continue to evaluate future AWOs to confirm the reduction in exposure value reported by the Project Teams.

6.5 Cost and Schedule Contingency

6.5.1 Cost Contingency

Status:

The ELPEP requires the MTACC to develop a Cost Contingency Management Plan (CCMP), which will define how the MTACC will forecast required contingency funds, manage and transfer all project cost contingency funds, and how the minimum level of contingency will be maintained. The MTACC submitted an updated CCMP, which is currently under review. MTACC has agreed to maintain minimum contingency balances referenced in the ELPEP:

- \$220 million through 90% Bid and 50% Construction
- \$140 million through 100% Bid and 85% Construction
- \$45 million through Start Up and Pre-Revenue Operations

Observations and Analysis:

The MTACC Draft Cost Management Plan has previously stated that SAS Available Contingency is calculated using Executed AWOs. This period, the MTACC has determined this calculation should be based upon the AWO Exposure value tabulated in the monthly AWO tracking logs. It is anticipated that future project reporting will use this value for contingency calculation and forecasting purposes.

The PMOC has calculated the contingency balance using both "AWO Exposure" and "Executed AWOs" and presented both in tabular and graphic formats. Using either method, the current contingency balance exceeds both the planned balance and the ELPEP Threshold.

Planned Balance: \$ 399,187,551
 Actual Balance (using executed AWOs): \$ 508,637,924
 Actual Balance (using AWO Exposure): \$ 493,717,641

This evaluation assumes award of the C5B construction package based upon the low bid received on February 4, 2011. As such, it incorrectly includes an AWO drawdown for this package in the "Planned Balance". This analysis will be updated next period to include best available forecasts for all contract construction packages.



Concerns and Recommendations:

To date, this evaluation has been limited to contingency usage required by the active construction packages. The available contingency must also be applied to any soft cost overruns. This contingency evaluation process must be extended to include all project costs.

6.5.1 Schedule Contingency

Status:

Schedule contingency reported by MTACC, based upon Update #59 of the SASIPS does not conform to schedule contingency threshold limits established by the ELPEP. Based on this update, schedule contingency measured against MTACC's RSD commitment date of 12/31/16 is 67 CD vs. the required 125 CD. When measured against the FTA/PMOC RSD estimate of 02/28/18, the contingency is currently 490 CD.

Observations:

Tracking available schedule contingency over recent schedule updates is summarized in the following table:

Table 6-1: Schedule Contingency

IPS Update #	53	54	55	56	57	58	59
Data Date	12/01/10	01/01/11	02/01/11	03/01/11	04/01/11	05/01/11	06/01/11
Contingency (CD)							
RSD=12/31/2016	165	165	165	168	165	97	67
RSD=02/28/2018	589	589	589	592	589	520	490

As discussed in Section 4.3 of this report, the SAS Project Team and the PMOC do not agree on the manner by which the construction procurement delays to Package C5b have been modeled in the IPS.

- The IPS has maintained the C5B blasting and excavation constraints detailed in the Contract General Requirements, Specification 01 14 00, paragraph 3.16. The delay

between now and the originally forecast NTP of March 29, 2011, has changed the duration of several of these constraints. The SAS Project Team acknowledges that the schedule forecast has changed and that modifications to these schedule constraints and relationships will be incorporated as "mitigation" after the award of the C5B Package.

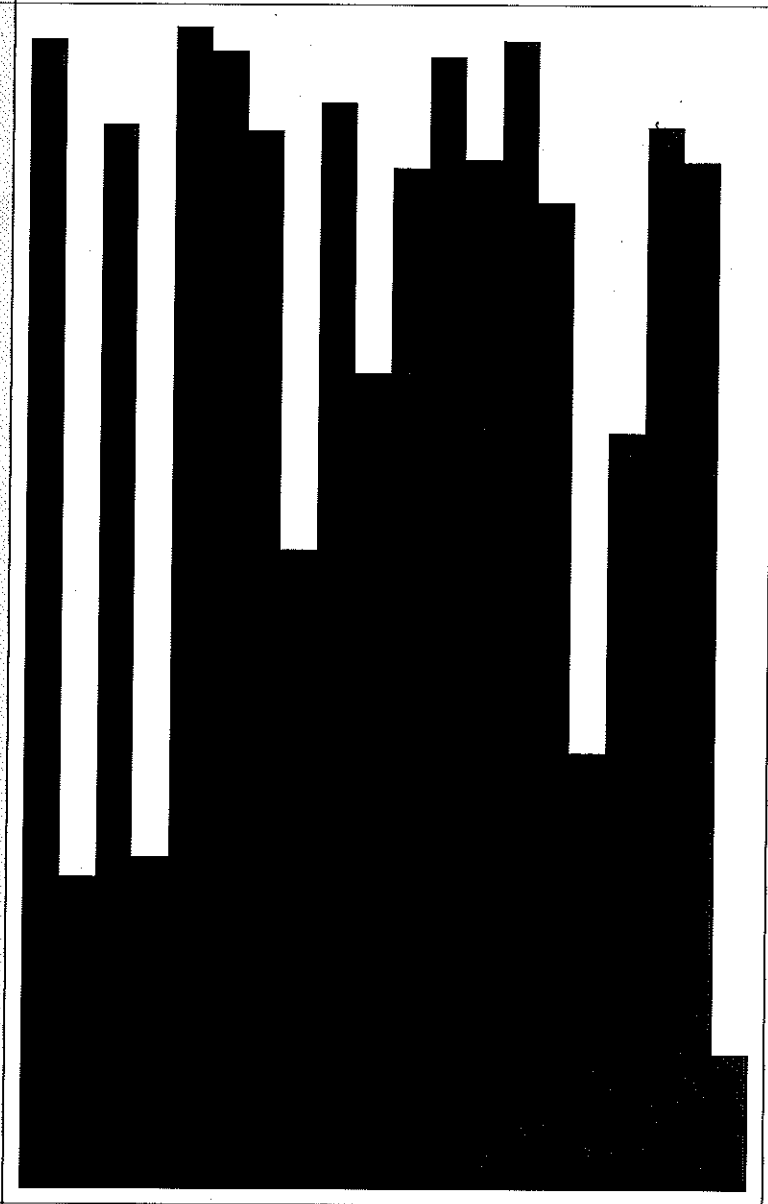






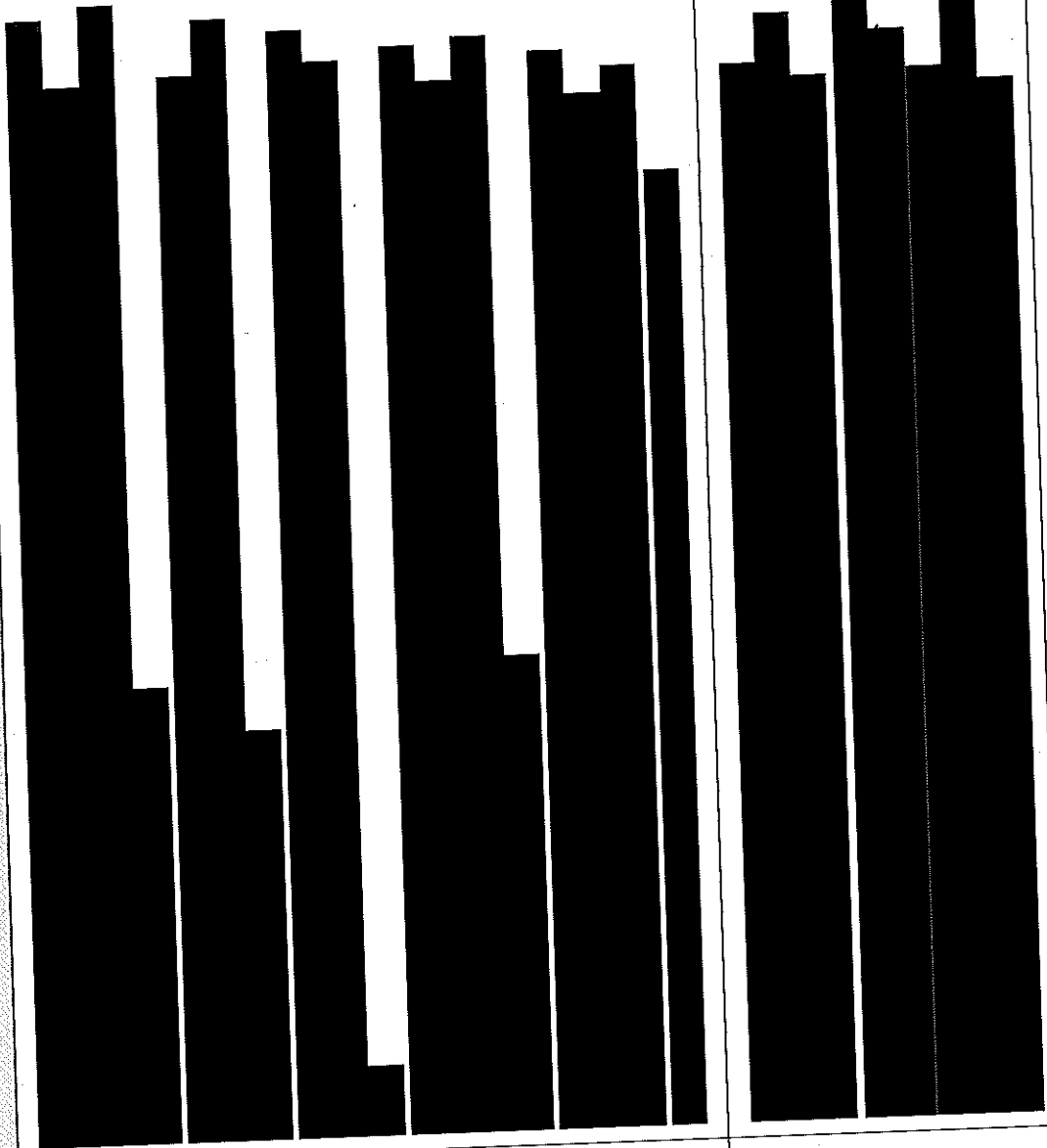






Concerns and Recommendations:





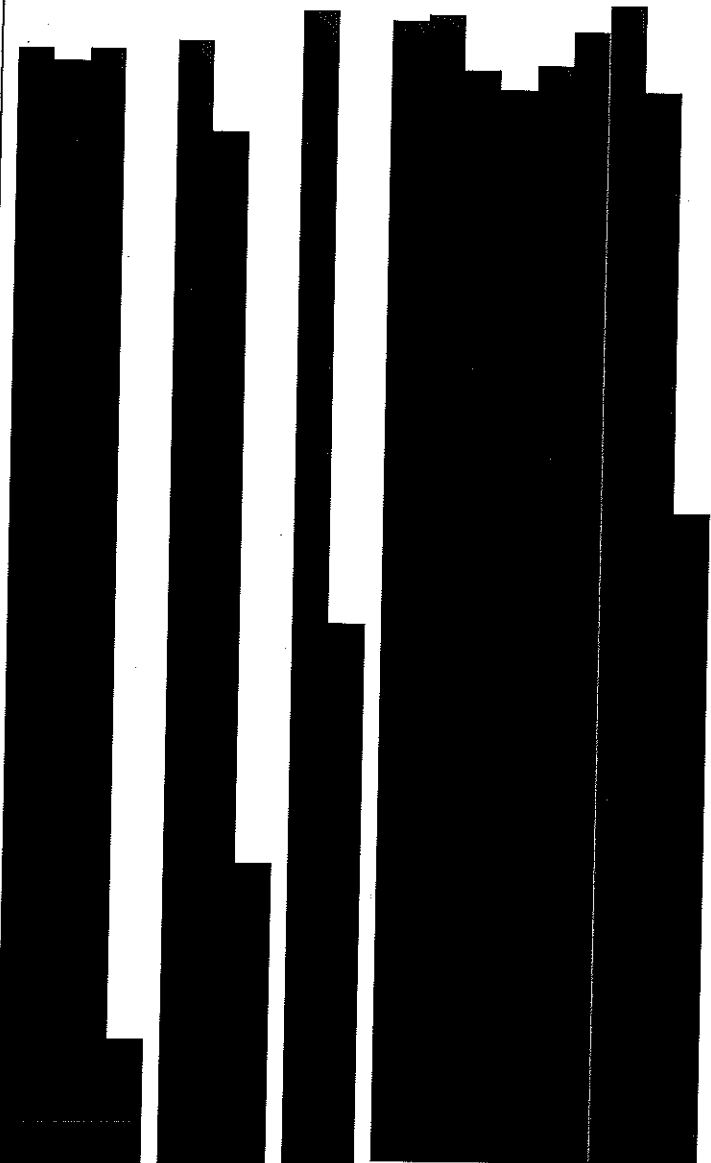




The PMOC is concerned that senior management and other interested stakeholders in the project understand some of the underlying assumptions and procedural issues pertaining to the C5B procurement that are embedded in IPS Updates # 57 thru 59. Specifically, the delays to the completion of construction currently forecast for SAS Phase 1 (see Table 6-1) represent an interim, contractual position that should be substantially mitigated upon formal execution of the C5B construction contract – assuming the matter is resolved in the foreseeable future.

[Redacted]

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[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]		[Redacted]	[Redacted]

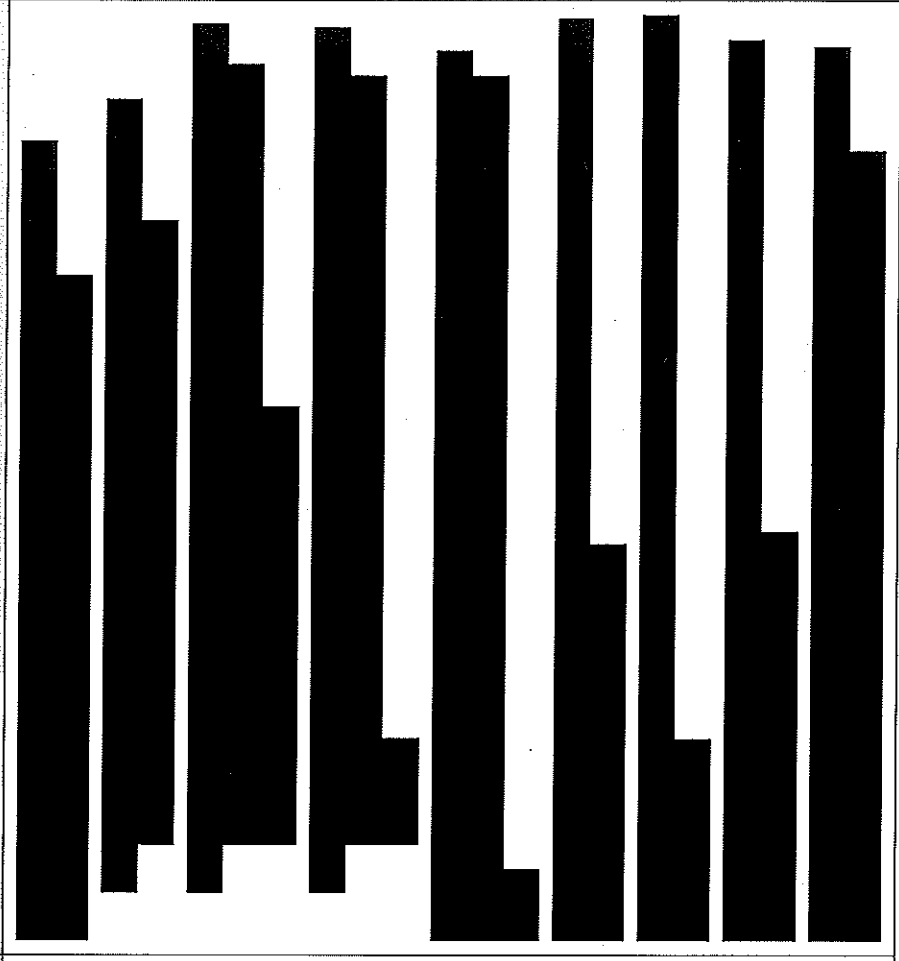
		
		
		
		
		






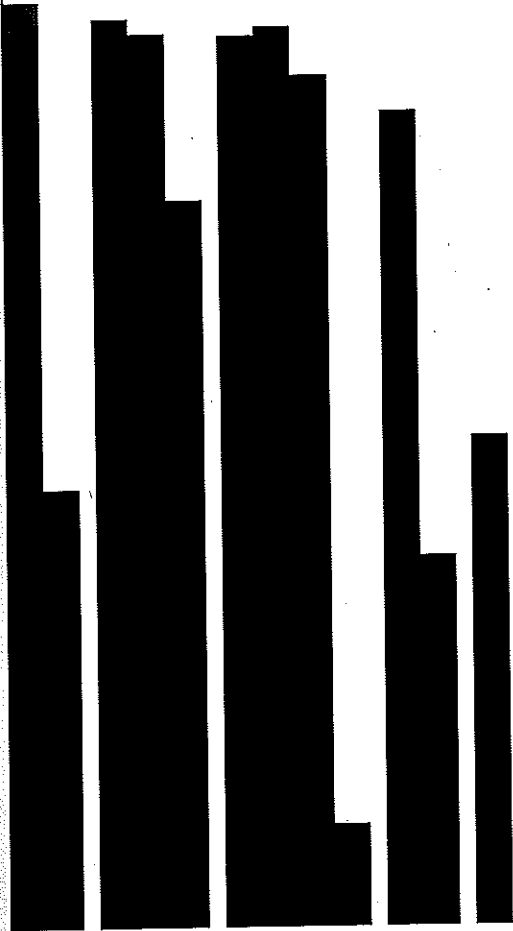




		
		
		
		

[REDACTED]		[REDACTED]
[REDACTED]		
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]



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APPENDIX A -- LIST OF ACRONYMS

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
AWO	Additional Work Order
BCE	Baseline Cost Estimate
BFMP	Bus Fleet Management Plan
CCM	Consultant Construction Manager
CD	Calendar Day
CMAQ	Congestion Mitigation and Air Quality
CPM	Critical Path Method
CPRB	Capital Program Review Board
CR	Candidate Revision
DHA	DMJM+Harris and ARUP
DOB	New York City Department of Buildings
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
HLRP	Housing of Last Resort Plan
IFP	Invitation for Proposal
IPS	Integrated Project Schedule
LF	Linear Feet
MEP	Mechanical, Electrical, Plumbing
MTACC	Metropolitan Transportation Authority -- Capital Construction
N/A	Not Applicable
NTP	Notice to Proceed
NYCDEP	New York City Department of Environmental Protection
NYCT	New York City Transit
PE	Preliminary Engineering
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PQM	Project Quality Manual
RAMP	Real Estate Acquisition Management Plan
RFMP	Rail Fleet Management Plan
RFP	Request for Proposal
ROD	Record of Decision
ROD	Revenue Operations Date
RSD	Revenue Service Date
S3	Skanska, Schiavone and Shea, JV
SAS	Second Avenue Subway
SCC	Standard Cost Categories
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency

SSPP	System Safety Program Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability Plan
TIA	Time Impact Analyses
UNO	Unless Noted Otherwise
WD	Work Day

APPENDIX B-- PROJECT OVERVIEW AND MAP
(Project Map is transmitted in a separate file)

Date: June 30, 2011

Project Name: Second Avenue Subway

Grantee: Metropolitan Transportation Authority

FTA Regional Contact: Mr. Hans Point du Jour

FTA Headquarters Contact: Mr. Dale Wegner

Scope

Description: The project will connect Manhattan's Central Harlem area with the downtown financial district, relieving congested conditions on the Lexington Avenue line. The current project scope includes: tunneling; station/ancillary facilities; track, signal, and electrical work; vehicle procurement; and all other subway systems necessary for operation. The current phase, Phase 1 of 4, will provide an Initial Operating Segment (IOS) from 96th Street to 63rd Street, and will connect with the existing Broadway Line that extends to Lower Manhattan and Brooklyn. Subsequent phases will extend the line northward to 125th Street and to the southern terminus at Hanover Square in Lower Manhattan.

Guideway: Phase 1 is 2.3 miles long, from 63rd Street to 105th Street. It is a two-track project that is below grade in tunnels, and does not include any shared use track.

Stations: In Phase 1 there are: two new mined stations located at 72nd and 86th Streets, one new cut and cover station at 96th Street, and major modifications of the existing 63rd Street Station on the Broadway Line.

Support Facilities: There are no additional support facilities planned for Phase 1 of the project.

Vehicles: MTA envisions the need for eight-and-one-half train sets to satisfy the Phase 1 operating requirements (7) and to provide sufficient spares (1½).

Ridership Forecast: Upon completion of Phase 1, ridership is expected to be 191,000 per average weekday (MTA's Regional Travel Forecast Model).

Schedule

12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTA schedule)		

18.9%	Percent Complete Construction at June 30, 2010		
67%	Percent Complete Time based on Rev Ops Date of December 30, 2016		
12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTA schedule)		
18.9%	Percent Complete Construction at June 30, 2011		
67%	Percent Complete Time based on Rev Ops Date of December 30, 2016		

Cost (\$)

3,839 M	Total Project Cost (\$YOE) at Approval Entry to PE (w/o Financing Costs)
3,880 M	Total Project Cost (\$YOE) at Approval Entry to FD (w/o Financing Costs)
4,866 M	Total Project Cost (\$YOE) at FFGA signed (w/ \$816 M Financing Costs)
4,673 M	Total Project Cost (\$YOE) at Revenue Operations (w/o Financing Costs)
5,489 M	Total Project Cost (\$YOE) at date of this report including \$ 816 M in Finance Charges
1,103M	Amount of Expenditures at date of this report from Total Project Budget of \$4,673M
32.75	Percent Complete based on Expenditures at date of this report
*	Total Project Contingency remaining (allocated and unallocated contingency)

* Being revisited as a result of the Enterprise Level Project Execution Plan

APPENDIX C – LESSONS LEARNED

Lessons Learned Table for 2nd Quarter 2011

#	Date	Phase	Category	Subject	Lessons Learned
1	Oct-09	Construction	Schedule	Delays to excavation caused by adjacent Fragile Buildings	The PMOC recommended and MTACC adopted a plan to review the stability of all of the buildings affected by the Second Avenue Subway project. MTACC instructed their Designer to review all the buildings along the project. Furthermore, they have the designer developing shoring plans for the fragile buildings and including this work in the future contracts. In this way the stabilization work cannot delay the contracts as it is part of the contract.
2	Nov-09	Construction	Schedule	3 rd Party Utilities changed the size of an electric volt after construction began.	The PMOC recommended that MTACC get the utility companies to agree that once they have approved the plans, they cannot make major changes after award. MTACC's SAS Project Executive is meeting with the utilities to work out this problem.
	Mar-10	Construction		No new lessons learned this period.	
	Jun-10	Construction		No new lessons learned this period.	
	Sep-10	Construction		No new lessons learned this period.	
	Dec-10	Construction		No new lessons learned this period.	
	Mar-11	Construction		No new lessons learned this period.	

APPENDIX D – PMOC STATUS REPORT

(This is a separate attachment covering both East Side Access and Second Avenue Subway projects)

APPENDIX E – SAFETY AND SECURITY CHECKLIST

Project Overview			
Project mode (Rail, Bus, BRT, Multimode)	Rail		
Project phase (Preliminary Engineering, Design, Construction, or Start-up)	Design and Construction		
Project Delivery Method (Design/Build, Design/Build/Operate/Maintain, CMGC, etc.)	Design/Bid/Build		
Project Plans	Version	Review by FTA	Status
Safety and Security Management Plan	7041.01.007308-0	11/15/07	Approved by FTA
Safety and Security Certification Plan			Certification by New York State Public Transportation Safety Board (NYSPTSB)
System Safety Program Plan			
System Security Plan or Security and Emergency Preparedness Plan (SEPP)			
Construction Safety and Security Plan		N	Each construction contractor is assigned the responsibility for developing a Construction Safety and Security Program Plan, as defined in the Contract Documents.
Safety and Security Authority			
Is the grantee subject to 49 CFR Part 659 state safety oversight requirements?	Y		
Has the state designated an oversight agency as per Part 659.9?	Y		NYSPTSB
Has the oversight agency reviewed and approved the grantee's SSPP as per Part 659.17?	Y		The NYSTB issued a letter of recertification on September 2, 2010.
Has the oversight agency reviewed and approved the grantee's Security Plan or SEPP as per Part 659.21?			
Did the oversight agency participate in the last Quarterly Program Review Meeting?	N		
Has the grantee submitted its safety	N		

Project Overview		
certification plan to the oversight agency?		
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	Y	
SSMP Monitoring	Y/N	Notes/Status
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	
Grantee reviews the SSMP and related project plans to determine if updates are necessary?	Y	
Does the grantee implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y	
Does the grantee maintain a regularly scheduled report on the status of safety and security activities?	Y	Activity included in the monthly and quarterly reports from the grantee.
Has the grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y	Responsibilities during the design and construction phases identified
Does the grantee update the safety and security responsibility matrix/organizational chart as necessary?	Y	
Has the grantee allocated sufficient resources to oversee or carry out safety and security activities?	Y	
Has the grantee developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y	Included in Appendix F of the SSMP
Does the grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	Frequency to be increased
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Three active construction contracts being daily monitored by the CCM with oversight being performed by the grantee.

Project Overview		
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	Y	Hazard and Vulnerability Analysis
Has the grantee ensured the development of safety design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured the development of security design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured conformance with safety and security requirements in design?	Y	Ongoing part of design review process
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	Y	
Has the grantee verified construction specification conformance?	Y	Reference Section D3.4 Construction Criteria Conformance of the SSMP
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	Y	Reference Section D3.2 Certification Items List of SSMP
Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	NA	Project is currently in the Design/Construction Phase
Does the grantee evaluated change orders, design waivers, or test variances for potential hazards and /or vulnerabilities?	Y	Part of formal configuration control process
Has the grantee ensured the performance of safety and security analyses for proposed work-arounds?	NA	
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: Activation Plan and Procedures Integrated Test Plan and Procedures Operations and Maintenance Plan Emergency Operations Plan	Y	
Has the grantee issued final safety and security certification?	N	To be covered as part of the testing in Contract 6
Has the grantee issued the final safety and security verification report?	N	To be covered as part of the testing in Contract 6
Construction Safety		

Project Overview		
Does the grantee have a documented/implemented Contractor Safety Program with which it expects contractors to comply?	Y	
Does the grantee's contractor(s) have a documented companywide safety and security program plan?	Y	
Does the grantee's contractor(s) have a site-specific safety and security program plan?	Y	Reference sections 011150 Safety Requirements and 011160 Security Requirements of the Contract Terms and Conditions
Provide the grantee's OSHA statistics compared to the national average for the same type of work?	OSHA Year-to-Date Recordable and Lost Time accident rates are 1.82 and 4.89 respectively thru June 30, 2011	National Average 2.2 and 4.2 respectively
If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?	NA	
Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?	Y	
Federal Railroad Administration		
If shared track: has grantee submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested)	NA	
If shared corridor: has grantee specified specific measures to address shared corridor safety concerns?	NA	
Is the Collision Hazard Analysis underway?	NA	
Other FRA required Hazard Analysis – Fencing, etc.?	NA	
Does the project have Quiet Zones?	NA	
Does FRA attend the Quarterly Review Meetings?	NA	

APPENDIX F – ON-SITE PICTURES
(to be transmitted in a separate email)

**APPENDIX G – SCHEDULE MANAGEMENT PLAN (SMP) CHECKLIST
(SEE ATTACHED)**

